

Nutritional Awareness, Diet Health Beliefs and Habits among Women from Two Different Socioeconomic Levels

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ABSTRACT

This study was conducted to assess the level of nutritional knowledge, diet-health related beliefs and practices among 80 women chosen at random from two different socioeconomic levels. Unhealthy food habits which are considered one of the leading causes of important health and nutritional problems, knowledge about healthy and unhealthy food was also assessed by a questionnaire. Data were also recorded about education, income, percentage of monthly income spent for food, healthy and unhealthy food score, food and drink choices, obesity and the level of physical activity and exercise.

Nutrition as well as healthy awareness score was measured by principal component analysis of 20 questions' responses. The survey also assessed if the studied women know the relation between bad habits, unhealthy food, under activity, and the risk of some diseases (hypertension, cancer, cardiovascular disease CVD, lack of immunity, diabetes, and obesity).

The results indicated that the majority of families in high socioeconomic group (HSS) had both higher education and income, therefore spent less percentage of their income for food compared with families in low socioeconomic group (LSS). It is worse to mention that many unhealthy food habits were detected only in LSS as 72.5% from such group were using newspaper for fried foods and 87.5% were putting foods in black plastic bags, some other habits were extremely high in LSS such as using oil when smoked as well as consuming high quantity of fried foods, pickles, fat especially from animal sources, and carbonated beverages. Results showed that higher education level promotes more healthy food and drink choices as well as high level of awareness as the percentage of mothers classified as high in awareness (score more than 55) were in HSS as triple as those from LSS, moreover 52.5% from mothers in LSS had low degree of awareness (score 35-45) compared to only 10% in HSS. Of the socioeconomic variables the income as well as education level had a great influence in food and drink choices which affected particularly healthy food score, eating breakfast as 80% in HSS used to eat breakfast regularly while 60% in LSS used either to skip or seldom eat breakfast. The level of education also affected sweets and jam daily consumption, and the level of activity and exercises (which have a great impact on weight gain and obesity which contribute to many diseases) as results showed that 100 % from children in HSS exercised versus less than one fourth (22.5%) in LSS. Education in addition to income were act as an effect modifier on health habits, practices and beliefs, hence when we assessed women's knowledge about the relation

between bad habits, unhealthy food and the risk of some diseases, 55% from mothers in HSS were get correct answer compared to only 22.5% in LSS. With respect to knowledge resources, results showed that TV have attained the highest percentage of recourses in both groups. Results also showed the close association between nutritional knowledge, health awareness and the level of education as Mann Whitney showed highly significant difference between the two groups in educational status, income, bad habits, while a significant relation was found in the degree of awareness and the knowledge about the relation between unhealthy food, bad habits and some chronic diseases.

INTRODUCTION

Procedural nutrition knowledge is the knowledge of how to eat a healthy diet, this type of knowledge potentially plays an important role in dietary behavior (Spillmann and Siegrist, 2011). Social, economic and cultural factors strongly influence individual food choices, healthy habits and physical activity. Among the numerous factors affecting dietary choices, nutrition knowledge and beliefs about foods and health – or nutrition information in short – is the most amenable to modification (Thomas, 1991). Presumably, increased knowledge of the nutrient content of foods and heightened awareness of diet-health relationships lead to more healthful food choices.

Unhealthy food habits are one of leading cause of important health and nutritional problems (Musaiger, et al., 2005). The role of nutrition has expanded significantly and it is now viewed as a tool that can be used not just to prevent disease but to promote health.

Many chronic diseases such as diabetes, metabolic syndrome, cardiovascular diseases CVD, and cancer are continuing to increase. Nutrients are considered the foundation stone to build up the immune system. If any of those basic elements is decreased the body is exposed to various diseases. Breastfeeding provides passive and likely long-lasting active immunity (Phelps and Hased, 2012). Lifestyle factors contribute to the blood profile characterized by high cholesterol. Notable among lifestyle factors are poor health habits such as smoking, overeating, over consumption of fat and under activity which are considered to be the main causes of cardiovascular diseases (CVD) and obesity. Obesity and diabetes are major causes of morbidity and mortality in the United States (Mokdad, et al., 2003). Obesity caused

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by unhealthy food and lack of activity alone increases the risk of CVD, but also contributes to many major risk factors such as diabetes, hypertension, high blood lipids and cancer. WHO(2003) ,world health organization, reported that about 30% of cancer deaths are due to the five leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use and alcohol drinks. Evidence suggests that one third of more than 500,000 cancer deaths that occur in the United States each year would be attributed to diet and physical activity habits, with another third due to cigarette smoking (Byers, et al., 2002).

This study was conducted to investigate the effect of socio-economic factors on food choice, food habits and practices, obesity and lack of activity (which are known to be risk factors to some chronic diseases)among women from two different levels and to measure their awareness and knowledge toward nutritional practices as well as nutritional knowledge resources also. The study also aimed to detect whether mothers in the two levels were aware about the relation between high intake of unhealthy food, bad habits and the occurrence of some chronic diseases such as hypertension, cancer, CVD, lack of immunity, diabetes and obesity.

MATERIALS AND METHODS

Survey was conducted to assess socioeconomic status, educational level, nutrition knowledge and health - diet related beliefs and practices. Target samples were 80 mothers from two socioeconomic levels (high and low) chosen at random. Low socioeconomic level had income below 2000 pounds/month and mother's education level were secondary or below. A carefully designed questionnaire was included to gather information about relevant socioeconomic factors, unhealthy and bad eating habits, high consumption of some foods considered to be risk factors to some diseases as well as the intake of some healthy foods.

Poor health habits chosen include smoking , sleeping immediately after dinner ,using newspaper for fried foods and sandwiches ,eating burned part of bread and grilled meat, using pesticides permanently, using black plastic bags for food, putting hot foods in plastic bags , under activity, skipping breakfast, permanent use of antibiotics and eating contaminated nuts as well as the high consumption of sweets, jam, fried foods, food high in saturated fat, junk foods, salt, pickles, processed meat, canned food, carbonated beverages and foods low in fiber, which are considered as risk factor for some diseases. The diseases that qualified to this classification were diseases that were known to be associated with high intake of such foods (hypertension, cancer, CVD,

lack of immunity, diabetes and obesity) .Healthy foods and beverages included honey, dates, cinnamon, black seed (*Nigella sativa*), anise, fennel, ginger, fenugreek, green tea, green salad, whole grains and legumes, peppermint, fish, honey syrup (honey solved in water) as well as foods high in fiber.

The respondents were asked to answer specified question designed to detect whether mothers were aware about the relation between the above bad habits and such unhealthy food and the risk of mentioned diseases. A series of nutrition-health knowledge and awareness questions (20 questions) were also included to measure mother's awareness about soaking legumes before cooking, cutting vegetables and fruits with the same knife used at the same time to cut meats and poultry without washing, tooth cleaning, peeling vegetables and fruits, soaking frozen food before cooking,soaking meats and poultry for washing or defrosting, leaving foods without covering, reading labels before purchasing, preserving foods in aluminum containers, drinking tea and coffee direct after meals, eating animal protein beside plant protein, knowing the importance of consumption of milk products and whole grain as well as fruits and vegetables, breastfeeding colostrums, overeating , washing hand before eating and after toilet, using same oil for frying more than 4 times and ventilating house. Mothers were also asked about their sources of knowledge regarding nutrition and health habits. Sources mentioned in this study were radio, television (TV), internet, newspaper and magazines, books, friends, mothers and parents.

The two groups were assigned after the collection of the dataset, therefore, the response of women who correctly linked consumption of such food and bad habits to risk factors of getting these diseases were reported and get marks=2 while those who didn't get mark = 0 while those who linked only some get 1. By the same way, values for consumption of healthy food and beverages were calculated; while marks for unhealthy food as well as bad habits were determined as follow: 3 for wrong habits or unhealthy food, 2 for sometimes and 1 for not consuming or not doing bad habits. Score were calculated by summing up values for each of the above categories, and then classified. It is important to mention that the increase of scores for unhealthy foods and bad habits reflects the decrease of mother's knowledge and awareness while the opposite for healthy foods. Scores were then converted to indexes to be statistically analyzed. Scores for awareness were also calculated according to mothers' answers, mark was 3 for correct answer, 1 for wrong one and 2 for sometimes. By summing then these values and calculated scores which were categorized into: high awareness with score more

than 55, moderate awareness if score ranged from 45-55 and low awareness to scores between 35 and <45.

Statistical analysis was carried out using SPSS advanced statistical software in the Institution of Statistics; Cairo University. Chi² was conducted as well as Mann Whitney test to detect significant relations.

RESULTS AND DISCUSSION

Table (1) showed the socioeconomic status of families from the two different levels. The data showed that age of women fluctuated between less than 30 to more than 60 years. More than half (55%) of women at high level aged from 30 to less than 40 years while more than one third (37.5%) of women in low socioeconomic level aged from 40 to less than 50 years.

With regard to marital status the majority of the studied women in the two levels were married (90% and 92.5%) in high and low levels respectively. With regard to educational status results in such table showed that 12.5% of the women in LSS (Low socioeconomic level) were illiterate while 40% and 60% from wives and husbands had finished secondary education. On the other hand the majority of wives and husbands in HSS (high socioeconomic status) had finished their university

education (77.5% and 90%) respectively, while 17.5% and 10% of wives and husbands in HSS were highly educated. In this concern the Central Agency for Public Mobilization and Statistics (2012) reported that literacy decreased in Egypt from 29.7 at 2006 to 26.1 at 2011.

With respect to the percentage of money spent for food, results showed that about two thirds (62.5%) of the families at low level spent more than 80% of their income for food compared with only (7.5%) on high level. From this table an inverse relation was noticed between income and the percentage of money spent for food. In this respect the Central Agency for Public Mobilization and Statistics (2012) reported that mean money spent for food in Egypt was 39.9% from total family income. Closed percent was found for 40% in HSS and 16% in LSS as they spent 25-50% of their income on food. It could be concluded that such percent reported the central agency for public mobilization and statistics was more applicable for HSS as their income was high, while for LSS, poor income and poverty made them spend greater percent from their low income for food.

Table 1. Distribution of families according to the socioeconomic status in the two studied levels

Age(Years)	HSS				LSS			
	Wives		Husbands		Wives		Husbands	
	N ^o	%						
<30	3	7.5	2	5	6	15	7	17.5
30-<40	22	55.0	16	40	6	15	8	20
40-<50	6	15.0	8	20	15	37.5	13	32.5
50-<60	6	15.0	9	22.5	9	22.5	12	12
60<	3	7.5	5	12.5	4	10.0	-	-
Educational Status	N^o	%	N^o	%	N^o	%	N^o	%
Illiterate	-	-	-	-	5	12.5	2	5
Preparatory	-	-	-	-	9	22.5	9	22.5
Secondary	2	5	-	-	26	40	24	60
University	31	77.5	36	90	-	-	5	12.5
Highly Education	7	17.5	4	10	-	-	-	-
Marital Status	N^o	%	N^o	%	N^o	%	N^o	%
Married	36		90		37		92.5	
Divorced	1		2.5		1		2.5	
Widow	3		7.5		2		5	
% of spent money for food	N^o	%	N^o	%	N^o	%	N^o	%
25-<30	8		20		-		-	
30-<50	8		20		-		-	
50-<70	13		32.5		3		7.5	
70-80	8		20		12		30	
80<	3		7.5		25		62.5	

LSS=low socioeconomic status

HSS=high socioeconomic status

Nutrition is the bridge between agriculture and health, diet high in fat specially saturated, sodium, low in fiber containing foods such as fruits vegetables and whole grain is associated with increased risk for several chronic diseases (Coronary heart disease, cancer). Diet also plays a major role in the development of diabetes, hypertension and lack of immunity. Moreover overweight and less activities and exercises are other major risk factors for such diseases. Bad food habits and unhealthy practices as well as the high intake of some foods which are considered to be risk factor to some diseases are summarized in table(2).

Results in such table revealed that smoking which is risk factor to many of the above diseases is highly prevalent in LSS 72.5% compared to only 40% in HSS. The incidence of obesity between the two studied groups was almost the same (45%, 50%) in low and high levels respectively. It is important to mention that higher percentage of obesity was found among LSS's children and HSS's parents.

Regarding to the consumption of unhealthy food, eating fried foods was extremely high in LSS (77.5%) as it was as double as those in HSS (35%), fried potatoes consumption was also high in LSS (95%) compared to (45%) in HSS. All the above variables are risk factor for cancer, obesity, diabetes and CVD (Cardiovascular diseases). The consumption in low and high socioeconomic levels was (17.5%, 12.5%) for processed meat and (20%, 15%) for junk food respectively. In this respect Kamel and EL Metwaly (2005) found that (62%) of adolescent female used to eat out at least once weekly, while those who used to eat out daily were (21.1%) among overweight and (4.3%) in normal weight. Another study conducted by Ebbeling et al., (2004), showed that obese subject consumed more fast food and high caloric food than normal weight subject.

With regard to unhealthy habits it could be mentioned that none of the studied women in the HSS used neither newspaper for frying nor black plastic bags when buying food. On the other hand this percentage was extremely high in LSS which were (72.5% and 87.5%) respectively.

The same table showed that the percentage of women in HSS level who usually used pesticide for insects was (35%), same percentage was noted for those eating the part of food burning during cooking, these percentages were lower in LSS (25% and 7.5%) respectively. It is important to mention that 70% of HSS refuse using oil if it smoked compared to only 30% in LSS. Almost equal percentages of both socioeconomic levels get rid of nuts and peanuts when fungus grows appear, it is important to point out that the majority of

women in HSS level (85%) didn't use plastic bags for hot food versus (67.5%) in LSS level. It could be noted that the percentage of samples using food containing artificial colors and chemical preservatives was more than half and less than two third in HSS and LSS (52.5%, 60%) respectively. In this respect Sloan (2011) assured that the consumers believe that limiting processed food are important for healthy eating, as processed foods are known to have higher amounts of sodium, preservatives flavor enhancers and artificial ingredients than home cooked unprocessed food sources.

Excess eating of some food like junk food, jam, sweets, carbonated and soft drinks, fried food, fried potatoes and some unhealthy habits like excluding breakfast from daily meals as well as sleeping immediately after meals specially dinner are known to lead to obesity.

Data in this table revealed that the consumption of jam and sweets was nearly the same in the two different levels (25%, 27.5%) for jam and (40%, 37.5%) for sweets in HSS and LSS respectively. More than one third of families in LSS consumed carbonated beverage which equal to three times those of HSS (37.5%, 12.5%) respectively. In this respect Kamel and EL Metwaly (2005) reported that 28% from the studied group used to consume soft drinks daily. With concerned to unhealthy habits related to obesity, it could be mentioned that two third (62.5%) of the HSS didn't sleep after meals specially dinner compared to only 37.5% in LSS, moreover 60% of LSS excluded breakfast from meals versus only 20% in HSS. In this respect the study conducted by Kamel and EL Metwaly (2005) reported that 27% of the studied females were regularly eating breakfast while 73% used either to skip or seldom eat breakfast.

The blood cholesterol connected with CVD, the higher the cholesterol and the saturated fat the greater the risk of CVD, it is well known that consuming diet containing high amount of fat specially saturated fat, fried food and junk food combined with smoking lower intake of fiber, lack of exercise and activities specially in obese people are major cause of CVD.

This table showed that the consumption of saturated fat was 20% in HSS and it was very high in LSS 67.5% as animal and hydrogenated oil were used as major source of fat in the majority of LSS when cooking. Colon-Ramosa et al., (2007) in their study demonstrated that palm oil was found to be the main source of fat among the LSS in Costa Rica. It is worthy to mention that although saturated fat was high in LSS the consumption of food containing fiber like whole grains and vegetables was very high in LSS as only 5% didn't consume those foods versus 17.5% in HSS. It is

important to mention that high percent of HSS used to peel vegetables and fruits before eating. In a study conducted by Kim et al.,(2012) they found that frequent labor readers were more satisfied when they saw protein and fiber content on the nutritional panel which has an impact in increasing fiber consumption.

Choosing bad quality of food as well as using infant formula (artificial feeding) instead of breast feeding, not caring to breastfeed colostrums and taking antibiotics without limit and without consulting doctors, such

factors lead to lack of immunity. From the table it could be noticed that a high percentage of both high and low levels was caring to breast feed their infants (80%, 95%) respectively while 35% of mothers in HSS and 15% from the LSS's mothers didn't care to breastfeed colostrums (pre-milk substance containing antibodies and white cells). It is also noted that one fifth of the LSS used antibiotics for their children from the first day of illness without doctor consultation compared to 17.5% for HSS.

Table 2. Prevalence of some bad habits, practices, unhealthy food and physical activity among both studied groups

Food habits and practices known risk factor for diseases	High Socioeconomic level						Low Socioeconomic level					
	Yes		No		Sometime		Yes		No		Sometime	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Smoking	16	40	24	60	-	-	29	72.5	11	27.5	-	-
Using newspaper for fried foods	-	-	40	100	-	-	29	72.5	5	12.5	6	15
Eating Burned food	14	35	21	52.5	5	12.5	3	7.5	30	75	7	17.5
Using Pesticide	14	35	14	35	12	30	10	25	16	40	14	35
Using smoked oil	3	7.5	28	70	9	22.5	12	30	12	30	16	40
hot food in plastic bags	-	-	34	85	6	15	1	2.5	27	67.5	12	30
Food in black plastic bags	-	-	40	100	-	-	35	87.5	3	7.5	2	5
Artificial color and preservatives	21	52.5	3	7.5	16	40	24	60	2	5	14	35
Eating contaminated nuts	5	7.5	35	87.5	2	5	4	10	36	90	-	-
Processed meat	5	12.5	19	47.5	16	37.5	7	17.5	11	27.5	22	55
Fried potatoes	18	45	3	7.5	19	47.5	38	95	1	2.5	1	2.5
Fried foods	14	35	8	20	18	45	31	77.5	1	2.5	8	20
Junk food	6	15	11	27.5	24	60	8	20	18	45	14	35
Obesity prevalence	20	50	20	50	-	-	18	45	22	55	-	-
Jam	10	25	16	40	14	35	11	27.5	7	17.5	22	55
Sweets	16	40	6	15	18	45	15	37.5	10	25	15	37.5
Carbonated beverage	5	12.5	16	40	19	47.5	15	37.5	3	7.5	22	55
Sleeping after dinner	2	5	25	62.5	13	32.5	4	10	15	37.5	21	52.5
Excluding breakfast	8	20	32	80	-	-	24	60	16	40	-	-
Lack of fiber	7	17.5	23	57.5	9	22.5	2	5	24	60	14	35
Higher Intake of saturated fat	8	20	20	50	12	30	27	67.5	4	10	9	22.5
Infant artificial feeding	8	20	32	80	-	-	2	5	38	95	-	-
Don't care to breastfeed colostrums	14	35	26	65	-	-	6	15	34	85	-	-
Antibiotics	7	17.5	19	47.5	14	35	8	20	21	52.5	11	27.5
Extra salt	3	7.5	15	37.5	22	55	6	15	17	42.5	17	42.5
Pickles	12	30	12	30	16	40	31	77.5	1	2.5	8	20
Canned food	8	20	16	40	16	40	6	15	34	85	-	-
exercising for mothers	10	25	17	42.5	13	32.5	4	10	36	90	-	-
exercising for children	40	100	-	-	-	-	9	22.5	31	77.5	-	-
Lack of activity	10	25	30	75	-	-	20	50	20	50	-	-

Among diet-related factors that affect blood pressures extra salt as well as canned food (known to be rich in sodium), as high sodium intake was the primary factor responsible for high blood pressure, excess body fat can also precipitate hypertension and thus increase risk of heart attack and stroke, while physical activities help to reduce hypertension.

From the obtained results it could be mentioned that 77.5% of LSS was taking high amounts of pickles and 15% added extra salt to food compared with only 30% and 7.5% respectively for HSS, as canned food are expensive 85% of LSS didn't use canned food compared with only 40% in HSS. Leshem (2009) reported that excessive sodium intake has been associated with many chronic diseases such as hypertension and higher risk of stomach cancer.

It is important to mention that high consumption of sweets, jam, carbonated beverage and junk food accompanied by lack of activity and fiber intake as well as obesity was known to be risk factors for diabetes.

Physical activities help to reduce hypertension, obesity, to help in lowering LDL and to raising HDL. From the same table, it could be noticed an inverse relation between the socioeconomic level and the level of exercise and activity of the children as only 22.5% of LSS children have been exercised compared to 100% of HSS children, with regard to mother's activity results in the same table showed that only 10% of LSS's mothers exercised versus 25% in HSS mothers while 50% of LSS's mothers were under active compared with only 25% of HSS's mothers.

Table (3) represents index from calculated scores for high consumption of food known to be risk factor for these diseases discussed before in table (2), unhealthy habits associated with these diseases as well as healthy food intake, question asked whether the studied women were aware about the relation between the risk factors and diseases. It is important to pay attention that the higher the score, the greater the risk of these bad habits and foods which means that as the score increase as the consumption of this risky food increase. On the other hand increasing the score of the healthy food reflects higher awareness and good choice of healthy food.

It could be noticed that education as well as income greatly affected food choices and habits as the LSS had higher score for risky food which reflect high consumption of such food and also get high score for harmful habits that indicated more practices for bad habits, as 37.5% of LSS's women get score from 14-20 compared to only 15% in HSS's women for risky food and 10% of LSS get score from 14-20 for harmful habits

versus only 2.5% in HSS. On the other hand lower score (decrease of unhealthy food consumption) was noted in HSS as 27.5% get score less than 7 compared with 5% in LSS. Same observation was noted for harmful habits as 42.5% of HSS get score less than 7 compared with only 27.5% in LSS.

The healthy food and beverage in this study were honey, black seed (*Nigella Sativa*), cinnamon, ginger, fenugreek, dates, green tea, green salad, whole grains, peppermint, fish, anise, fennel, honey syrup (honey dissolved in water) and food containing high fiber. Regarding to the consumption of healthy food results in the same table revealed that 32.5% of HSS level consume the most healthy food (had score from 16 to 22) compared with only 12.5% in LSS, while 40% of HSS get score from 9 to 15 compared to 72.5% in LSS. Evidence in table (3) supports that the education promotes more healthful food choices as about one third of women in HSS gets the highest score from 16 to 22.

It is important to mention that 55% of HSS were aware about the relation between healthy, unhealthy food, bad habits and the occurrence of some diseases compared to 22.5% in LSS level. Moreover 55% of LSS were not aware about such relation compared to only 20% in HSS. Spillmann and Siegrist (2011) in their study about consumers' knowledge of healthy diets and its correlation with dietary behavior indicated that misconceptions exist in the general population about healthy eating; these misconceptions are associated with a decreased consumption of food usually defined as healthy. In this concern the American Cancer Society (ACS) has set aggressive challenge goals for the nation to decrease cancer incidence and mortality and declared that more than one third of cancer death that occur in US each year can be attributed to diet and physical activity habits, while another third due to cigarette smoking (Byers et al., (2002)).

Concerning awareness the results in table (4) illustrated the nutritional knowledge and diet-health awareness among the two studied levels, as diet-health awareness among other factors influence individual's eating habits and food choice. From this table it could be noticed that more than half (52.5%) of the LSS women had low level of awareness (35-<45) compared to only 10% on HSS level. On the other hand only 5% of women in LSS had high degree of awareness (>55) compared to 15% in HSS, from such table it could be noticed that three fourth (75%) of mothers in HSS had a moderate degree of awareness (45-55) compared to 42.5% in LSS level.

Table 3. Scores of risky food, bad habits, healthy food and mother's knowledge about the relation between risk factors and some diseases

Items	HSS			LSS	
	Score	No	%	No	%
Food risky for some diseases	7>Low	11	27.5	2	5
	7-13	23	57.5	23	57.5
	14-20	6	15.0	15	37.5
Harmful Habits	7>	17	42.5	11	27.5
	7-13	22	55.0	25	62.5
	14-20	1	2.5	4	10
	>20	-	-	-	-
Healthy Food	8>=	11	27.5	6	15
	9-15	16	40.0	29	72.5
	16-22	13	32.5	5	12.5
Mother's answer about the relation between risk factors and some diseases	I know	22	55	9	22.5
	Don't know	8	20	22	55.0
	Know some	10	25	9	22.5

Table 4. The degree of awareness among the two studied groups

Awareness	HSS		LSS	
	No	%	No	%
High >55	6	15	2	5
Moderate 45-55	30	75	17	42.5
Low 35-<45	4	10	21	52.5

Spillmann and Siegrist (2011) indicated in their study about consumers' knowledge of healthy diet that the procedural nutrition knowledge items received between 3% and 38% incorrect answers and noted that individual with a higher number of correctly answered items consumed more vegetables.

Table (5) Illustrated knowledge resources and numbers regarding nutrition and food habits in the two different socioeconomic levels, it could be noticed from such table that about three fourth of LSS and only one fourth of HSS level had less than three resources for knowledge and awareness, while more than half (57.5%) of HSS had from 3 to 5 resources of knowledge, this percentage was only 22.5% for LSS. It is worthy to mention that 17.5 % of studied women in HSS had numerous media(6-8) for learning and increasing their knowledge about healthy and unhealthy food versus only 7.5% for LSS level.

The studied women were asked about the main sources of nutritional information, it was found that The knowledge resources that have attained the highest percentage in the two levels was T.V(65% and 90% in HSS and LSS respectively)as TV has a strong effect on

the nutrition behavior followed by friends (62.5% ,47.5% in HSS and LSS respectively).

Same observation was found in the study conducted by Kamel and EL Metwally (2005) and Fakroo (2003) who found that T.V was the most important source of knowledge. Internet and books gained low percentage in LSS (10%, 2.5%) respectively, meanwhile internet get almost equal percent as T.V. in HSS and represent 6 times that found in LSS. It is important to mention that books in HSS gained 40% which represented 16 times that in LSS.

Chi² test was conducted in the two socioeconomic levels to detect the relation between education, income and each of the degree of awareness, risky food, harmful habits, healthy food as well as question asked whether studied mothers were aware about the relation between food habits, risky food and some diseases.

Result in table(6) revealed that high significant relation(inverse relation) was found in LSS between education and taking healthy food (Chi²=13.876 at 0.05),the same relation was found between income and bad habits in HSS as Chi²= 11.6111 at 0.05 .A significant difference was found between income and awareness in HSS at 0.1 as Chi² was 8.654.

Mann Whitney test was also conducted. Data on Mann Whitney test were presented in table (7). From this data it could be noted that high significant differences were noted between socioeconomic levels and each of education, income and unhealthy habits at 0.05 as $Z=7.36$, 7.313 and 2.950 respectively. It is important to mention that education was significantly higher in HSS as mean rank was 58.61 versus 22.39 in LSS. It is noted that income was strongly higher in HSS than LSS (mean rank = 58.92 and 22.08 respectively).

It is important to mention that as socioeconomic level increase as the consumption of risky food decrease an inverse relation was noted between socioeconomic level and the consumption of risky food as mean rank was 42.76 in LSS and 33.74 in HSS.

A significant relation was found at 0.1 between socioeconomic level and general awareness which was

higher in HSS ($Z=1.676$ and mean rank = 44.3 compared with 36.7 in LSS). A significant difference was also noted between socioeconomic level and the answer of the question as when the socioeconomic level increased the awareness about the relation between food habits and some diseases increased as $Z=1.759$ at 0.1 and mean rank =44.78 in HSS and 36.22 in LSS.

In this concern Beydoum and Wang (2008) showed that multivariate analysis indicated that better socioeconomic status likelihood of adequate fruits and vegetables intake of overall diet quality. The same study found that education showed no association with diet quality among subjects in the lowest nutrition knowledge and believes interaction $P \leq 0.1$ for Healthy Eating Index and both fruits and vegetables guidelines. A similar interaction was noted for poverty income ratio.

Table 5. Knowledge resources and numbers among the two studied groups

Source Number	HSS		LSS	
	No	%	No	%
6 -8	7	17.5	3	7.5
3-5	23	57.5	9	22.5
3>	10	25	28	70
Sources name				
Radio	9	22.5	1	2.5
T.V.	26	65	36	90
Internet	24	60	4	10
Newspaper	10	25	8	20
Books	16	40	1	2.5
Friends	25	62.5	19	47.5
Parents	20	50	3	7.5
All the resources	3	7.5	-	-

Table 6. The relation between education, income and some variables (chi2 test)

Education and each of	HSS			LSS		
	Pearson chi ²	C.C	Sign	Pearson chi ²	C.C	Sign
Awareness	1.132	0.166	0.889	12.559	0.489	0.51
Risky food	3.443	0.282	0.487	4.416	0.315	0.621
Bad habits	1.433	0.186	0.838	6.615	0.377	0.358
Healthy food	3.959	0.300	0.412	13.876	0.507	0.031**
The relation between food and diseases	4.406	0.315	0.354	9.796	0.444	0.134
Income and each of	HSS			LSS		
	Pearsonchi ²	C.C	Sign	Pearson chi ²	C.C	Sign
Awareness	8.654	0.428	0.062*	4.225	0.309	0.376
Risky food	5.084	0.336	0.279	5.886	0.358	0.208
Bad habits	11.6111	0.474	0.020**	3.983	0.301	0.408
Healthy food	0.921	0.150	0.922	6.610	0.377	0.158
The relation between food and diseases	1.631	0.198	0.803	1.663	0.200	0.797

Table 7. The difference between the two studied levels and some variables (Mann Whitney test)

Variables	Socioeconomic Level	Mean Rank	Z	Sign	Results
Educational Status	LSS	22.39	7.360	0.00	**
	HSS	58.61			
Income	LSS	22.08	7.313	0.00	**
	HSS	58.92			
Awareness	LSS	36.7	1.676	0.094	*
	HSS	44.3			
Bad habits	LSS	42.76	2.950	0.003	**
	HSS	33.74			
Risky Food	LSS	43.72	1.401	0.161	NS
	HSS	37.28			
Healthy Food	LSS	39.29	0.521	0.602	NS
	HSS	41.71			
The question	LSS	36.22	1.759	0.079	*
	HSS	44.78			

**significant at 0.05

*significant at 0.1

In this respect Kim, et al. (2012) noted that family history of disease had no impact on association of salt or sodium intake with disease knowledge/dietary association ($P>0.05$). Having a decrease history did not increase the level of belief of excess sodium and salt intake as increased risk of getting diseases.

Spillman and Siegrist (2011) indicate that misconceptions exist in the general population about healthy eating.

RECOMMENDATIONS

Nutritional education is essential especially for mothers.

Improvement of overall diet quality, good habits and regular exercise are the best way to healthy life.

Socioeconomic interventions must be coupled with health-nutrition programs targeting all the population specially those with poor income and low education.

There is a need for national program through TV as it was found in this study and many others the most important source of knowledge.

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الملخص العربي

الوعي الغذائي – العادات والمعتقدات الغذائية والصحية بين سيدات من مستويين مختلفين

اجتماعيا واقتصاديا

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السيدات الأعلى في التعليم اللاتي صنفن في مستوى الوعي الأعلى (درجة أعلى من ٥٥) ثلاثة أضعاف مثيلاهن في المستوى الأقل في التعليم، كذلك حصلت ٥٢,٥% من الأمهات الأعلى في التعليم على درجات وعى من ٣٥ إلى أقل من ٤٥ بالمقارنة ب ١٠% فقط في المستوى المنخفض. من الجدير بالذكر أنه من بين كل العوامل الاقتصادية والاجتماعية فان كل من التعليم والدخل لهما تأثير كبير على الاختيارات من الأغذية والمشروبات والذي أثر بدوره على تناول الأغذية المفيدة وعلى الاهتمام بتناول وجبة الإفطار حيث كان ٨٠% من المستوى الأعلى حريصين على تناول الإفطار بينما ٦٠% من المستوى المنخفض لا يهتمون بتناولها.

مستوى التعليم أثر أيضا على المتناول من بعض الأغذية مثل المربي، الحلوى والمخللات أيضا كان له تأثير على ممارسة الرياضة (الذي له علاقة بزيادة الوزن) حيث كان ١٠٠% من الأطفال في المستوى التعليمي المرتفع يمارسون الرياضة في الأندية بانتظام مقارنة ب ٢٢,٥% فقط في المستوى الأقل.

التعليم إضافة للدخل أثرا بشدة على العادات الصحية، الممارسات والمعتقدات حيث أنه بسؤال السيدات تحت الدراسة عن مدى معرفتهن بعلاقة العادات الضارة والأغذية غير الصحية ببعض الأمراض كانت الإجابات صحيحة ل ٥٥% من الأمهات في المستوى الأعلى مقارنة ب ٢٢,٥% فقط في المستوى المنخفض. بخصوص مصادر المعلومات أوضحت النتائج أن التلفاز هو أهم مصدر للمعلومات في كلا المستويين. أوضحت النتائج الإحصائية علاقة عالية المعنوية بين المعلومات الغذائية، الوعي الصحي ومستوى التعليم حيث أظهر اختبار مان ويتني فروقا عالية المعنوية بين كلتا المجموعتين في مستوى التعليم، الدخل وكذلك العادات السيئة، بينما وجدت علاقة معنوية بين المجموعتين في كل من مستوى الوعي ومدى المعرفة بعلاقة العادات الضارة والأغذية غير الصحية ببعض الأمراض.

تم إجراء هذه الدراسة لتقدير درجة الوعي الغذائي وبعض الممارسات الغذائية والصحية بين ٨٠ سيدة تم اختيارهم عشوائيا من مستويين مختلفين اجتماعيا واقتصاديا. تم أيضا التعرف على بعض العادات الغذائية غير الصحية والتي تعد من المسببات لكثير من المشاكل الغذائية والصحية، كذلك تم سؤال السيدات عن تناول الأغذية المفيدة والضارة كما تم جمع البيانات الخاصة بالتعليم، الدخل، نسبة المنصرف من الدخل على الطعام، استهلاك بعض الأغذية الضارة كذلك المفيدة، الاختيارات من الأغذية والمشروبات، مدى انتشار السمنة بين أفراد العائلة ودرجة النشاط البدني وممارسة الرياضة.

درجة الوعي الغذائي والصحي تم قياسها من خلال ٢٠ سؤالاً وكذلك تم التعرف على مدى معلومات السيدات تحت الدراسة بعلاقة العادات الغذائية والصحية الضارة وكذلك نقص النشاط، بالإصابة ببعض الأمراض (ارتفاع ضغط الدم، السرطان، أمراض القلب والشرايين، نقص المناعة، السكري والسمنة).

أوضحت النتائج أن الغالبية من الأسر في المستوى العالي كانت لديهم مستويات أعلى في كل من التعليم والدخل لذلك كان نسبة المنصرف من الدخل على الطعام أقل من الأسر ذوى المستوى المنخفض من الدخل والتعليم. أوضحت النتائج وجود بعض العادات الغذائية غير الصحية فقط بين المجموعة المنخفضة في المستوى الاجتماعي والاقتصادي حيث كان ٧٢,٥% منهم يستخدمون أوراق الجرائد للأغذية المحمرة بينما ٨٧,٥% يضعون الأغذية في أكياس سوداء اللون. بعض العادات الضارة كانت منتشرة في كلتي المجموعتين ولكن كان نسبة انتشارها شديد الارتفاع في المجموعة المنخفضة مثل استخدام الزيت المدخن، تناول الكثير من المقلبات، المخللات، الإفراط في الدهون خاصة من المصادر الحيوانية كذلك زيادة تناول المشروبات الغازية. أظهرت النتائج أن ارتفاع مستوى التعليم يتيح اختيارات أفضل من الأغذية والمشروبات وأيضا يؤدي لدرجة وعى أعلى من ذوى التعليم المنخفض حيث كانت