

Mothers Awareness Regarding Food Allergy among Their Children

¹Yasmeen Sayed Abd El Baset ²Faten Khayrat El Guindi, ³Mervat Mohammed Hassan

1 Nursing master student 2 Professor of Community Health Nursing, 3 Lecturer of Community Health Nursing - Faculty Of Nursing. Ain Shams University.

Abstract

Background: Food allergy defined as an adverse immune response to specific foods, typically proteins. In children, there are eight foods that cause 90% of food allergy. These diseases include food allergies, fever, atopic dermatitis, asthma, and anaphylaxis Symptoms include red eyes, and itchy rash, runny nose, shortness of breath, and swelling. **Aim of study :** to assess mothers awareness regarding food allergy among their children. **Design:** A descriptive correlation study was used. **Setting:** study was conducted as follows: pediatric Out Patient Clinic of Ain Shams, Helwan General Hospital and Dar El Salam General Hospital. **sample** study included 730 Mothers Who Had Children Diagnosed With food Allergy. **Tools:** four Tools were Used In This Study: First tool was An Interviewing Questionnaire, Second tool was questions about awareness regarding food allergy among their children , Third tool was questionnaire Form for measuring the indicators of mothers behaviors in relation to food allergies for their children, and fourth tool was questionnaire Form to measure the factors affecting the lifestyle of mothers with regard to food allergy among children . **Result,** current study showed that 56.0 % of mothers of sample had satisfied level of awareness with food allergy among their children, while 44.0% of mothers of sample had unsatisfied level of awareness with food allergy among their children, 69.5% of mothers of sample had negative behavior toward food allergy among their children, while 30.5% of mothers of sample had positive behavior toward food allergy among their children. **Conclusion,** current study result there were highly statistically difference between mothers awareness about food allergy among their children and their life style, at $r < 0.001$, and Finding of current study showed that there were high significance relation between mothers awareness and their behaviors about food allergy among their children at $r < 0.001$, **Recommendation** , Educating the mothers who have child suffering from food allergy, and impact of life style on their children status and how to protect their children from food allergy

Key words: food allergy, Lifestyle , children

Introduction:

Food allergy is defined as an adverse immune response to specific foods, typically proteins . In children, there are eight foods that cause 90% of

food allergy. These diseases include fever, food allergies, atopic dermatitis, asthma , and anaphylaxis Symptoms may include red eyes, an itchy rash, runny nose, shortness of breath, or swelling (**Types of Allergic**

Disease". NIAID. 29 May 2015. Retrieved, 2015).

Symptoms of a food allergy :

1 - Skin problems (red spots that look like mosquito bites) , rashes ,eczema, also called atopic dermatitis and Swelling)

2 - Breathing problems (Sneezing , Wheezing and Throat tightness)

3 - Stomach symptoms (Nausea , Vomiting and Diarrhea)

4 - Circulation symptoms (Pale skin and, Loss of consciousness).

The symptoms and severity of allergic reactions to food can be different between individuals, and can also be different for one person over time. Anaphylaxis is a sudden and severe allergic reaction that may cause 5 -death. Not all allergic reactions will develop into anaphylaxis. (CDC , 2015).

Food allergies are often hard to document, even by physicians trained in allergy and immunology. Blood tests for antibodies to specific allergens, skin tests, , may not be definitive. The most conclusive diagnostic test is a so-called double-blind food challenge (Bedolla B. M.et al, 2016).

Significance of the Study:

Food and respiratory allergy prevalence increased with income level. Children with family income equal to or greater than 200% of the poverty level had the highest prevalence rates(Kristen D, 2013).

The prevalence of food and skin allergies increased in children aged 0–17 years Younger children were more likely to have skin allergies, while older children were more likely to have respiratory allergies. (Kristen D, 2013).

Aim of the Study:

The aim of the present study is to assess mothers awareness regarding food allergy among their children through:

- Assessing Mother's Awareness About Their Children Food Allergy
- Assessing Mother's Behaviors toward Their Children Food Allergy.
- Identifying Aspects Of Life Style Regarding Food Allergy In Children.
- Assessing Life Style Of Mothers And Their Children Regarding Food Allergy

Research question:

1.Is There a Relation between Mother's Life Style and Food Allergy in Their Children?

2.Is There a Relation between Mother's Awareness about Their Children Food Allergy and Life Style?

3.Is There a Relation between Mother's Behaviors and Their Children Food Allergy?

Subjects and Methods:

A-Research design:

A descriptive research design was used in this study.

B-Setting:

The study will be conducted as follows:

-pediatric Out Patient Clinic of Ain Shams university Hospital

- pediatric Out Patient Clinic of Helwan General Hospital ,

- pediatric Out Patient Clinic of Dar El Salam General Hospital .

C-Subject:

Simple Random Sample of sitting Representing about 25% Of TOTAL Number of mothers have Children Who Attend The Previous Mentioned Setting In Previous Year (2015) .730 client from 9930

• **Dar El Salam General hospital:204 client**

• **Helwan General hospital: 22 client**

Ain Shams University hospital: 504 client

Tools of data collection:

Four tools will be used in this study as follows:

A) First tool is An Interviewing Questionnaire which includes:

Part 1**Demographic data for Mother: -**

This tool was developed by the researcher, It was concerned with assessment of Demographic

characteristics of the mothers including:- (Academic Qualifications - Age - (chosen) Mother's Name - Position – Residence - Phone Number(chosen))

PART 2: demographic data for child:- This part was developed by the researcher It was concerned with assessment of Demographic characteristics of the child including :- (Age - Name - sex - Diagnosis - Date of medical examination)

part 3: Growth and development child assessment tool.

This tool was developed by the researcher, at this part assess child for Anthropometric measurements such as the following:- (Weight - Height - head circumference - abdominal circumference - chest circumference)

B) Second tool :This tool was developed by the investagator, used to assess mothers awareness the following twelve questions about awareness regarding food allergy among their children , such as :-

C) Third tool:- is questionnaire Form for measuring the indicators of mothers behaviors in relation to food allergies for their children,This tool was developed by the investagator, this part include five questions .

D) Fourth tool:-This tool was developed by the researcher, it is questionnaire Form to measure the factors affecting the lifestyle of mothers with regard to food allergy among children, At this part asked each mothers six questions.

II- Operational design:

The Operational design was discussed in terms of pilot study and field work.

Pilot study:

A pilot study was carried out on a sample of 10% of the mothers (child) of total number and was chosen randomly before starting the data collection and they will not included in the study sample. The aim of this pilot study was to test the data collection tools clarity and applicability on the sample, to estimate the time needed to complete the data collection tools and finally to identify the possible obstacles or problems in data collection. Necessary modifications done. The mothers (child) in the pilot study were excluded from the total sample.

Fieldwork:

This stage includes collection of data; this collection was completed over a period of 4 months, during the morning shift, before distributing the questionnaire sheet, clear instructions were given to every participant about the purpose of the study. The questionnaire sheets will be fulfilled by researcher on the same day. Each questionnaire sheet for mother took about (20-30) minutes to be fulfilled. The researcher checked each questionnaire sheet after being completed to ensure the completion of all items. Interviewing mothers involved in the present study in both settings using a questionnaire sheets, during founding in outpatient clinics in hospital. The purpose of the study explained to the mothers, the interview will be conducted in simple language, and

each interview lasts for about (20-30) minutes.

III- Administrative design:

Before the conduction of the study, an official letter was taken from the Dean of Faculty of Nursing in Ain Shams University to the directors of medical and nursing departments in Ain Shams University Hospital - Out Patient Clinic and General Hospitals (Helwan General Hospital – Dar El Salam General Hospital) - Out Patient Clinic –affiliated to Ministry of Health to obtain their approval. After explanation of the purpose of the study, a written permission was secured from them.

Ethical consideration:

The aim of the study should be explained to each participant of mothers, to obtain their oral agreement and to be familiar with the importance of her participation and assure to them that the information obtained will be confidential and used only for the purpose of the study. A verbal agreement will be taken from each participant in the study, after a clear and simple explanation of the purpose and importance of the study.

IV-Statistical design:

Data Collected was coded and arranged, statistical analysis done, also data presentation done using suitable tables and graphs, frequencies, association between variables was tested using suitable test.

Results

Table (1):- Distribution of mothers according to their demographic characteristics (n= 730)

Items	No	%
Academic Qualifications of mothers:		
Can't read & write	80	11.0
Read & write	12	1.6
Preparatory & Basic level.	419	57.4
Secondary level	114	15.6
High ed.	105	14.4
Age of mothers / yrs		
21-25 yrs	30	4.1
26-30 yrs	420	57.5
31-35yrs	180	24.7
36-40 yrs	100	13.7
Occupation:		
Work	146	20.0
Not work	584	80.0
Residence:		
Rural	569	77.9
Urban	161	22.1

Table 1: show that 57.4% of mothers who in study were basic education, 1.6 % were able to read and write, 57.5 % of mother's age were between 26 years to 30 years, 80 % of mothers were hadn't work or not employed, 77.9% of mothers living in rural areas.

Table (2):- Distribution of children's according to their demographic characteristics (n= 730)

Items	No	%
Sex of children		
Male	489	67.0
Female	241	33.0
Age of children / yrs		
1	116	15.9
2	43	5.9
3	219	30.0
4	206	28.2
5	146	20.0
Date of medical examination:		
Within 24 hrs	88	12.1
Within 48 hrs	642	87.9

Table (2): reveals that 67.0 % of children were males, 30.0 % of children their ages were three years, 5, 9% of children their ages were two years, 87.9 % of children went to hospital for making examinations within 48 hours.

Table (3): Distribution of mothers according to their awareness about food allergy among their children (n= 730)

Items	No	%
types of allergies that affect on children:		
food allergy	563	77.1
allergic to insect stings	146	20.0
drug allergy	21	2.9
food that cause food allergy:		
Milk	15	2.1
Fish	305	41.7
Eggs	150	20.5
fruit (bananas, strawberries, mango	116	15.9
Chocolate	144	19.7
food that cause food allergy for your child:		
Milk	45	6.2
Fish	73	10.0
Eggs	90	12.3
fruits (bananas, strawberries, mango	202	27.7
Chocolate	144	19.7
Milk + fish	15	2.1
Milk + eggs	30	4.1
Fish + eggs	58	7.9
Fish+ chocolate	58	7.9
Eggs + chocolate	15	2.1

Table (4 –a) : show that 77.1% of mothers know that food allergy affect on their children, 41.7% of mothers know that food allergy caused by fish, 27.7 % of food allergy that affected on children caused by fruits (strawberry, mango, banana).

Table (4): Distribution of mothers according to their awareness that affect food allergy toward children (n= 730)

Items	No	%
duration of symptoms to start with your child within:		
Immediately	247	33.8
Within 3 hrs	468	64.1
Within 6 hrs	15	2.1
level of food allergy your child has:		
Mild	447	61.2
Moderate	19	2.6
Severe	264	36.2
Has your child food allergy and went to hospital previously:		
Yes	86	11.8
No	644	88.2
Times numbers of food allergy that appears for your child:		
One	644	88.2
Two	86	11.8

Table (4-b): show that 64.1% of children had symptoms of food allergy appeared within 3 hours, 61.2% of sample had mild level of food allergy, 88.2 % of sample hadn't food allergy previously and it is first time of food allergy symptoms to appears.

Figure (1): Distribution of mothers according to their total awareness Level of mothers for food allergy among children (n= 730)

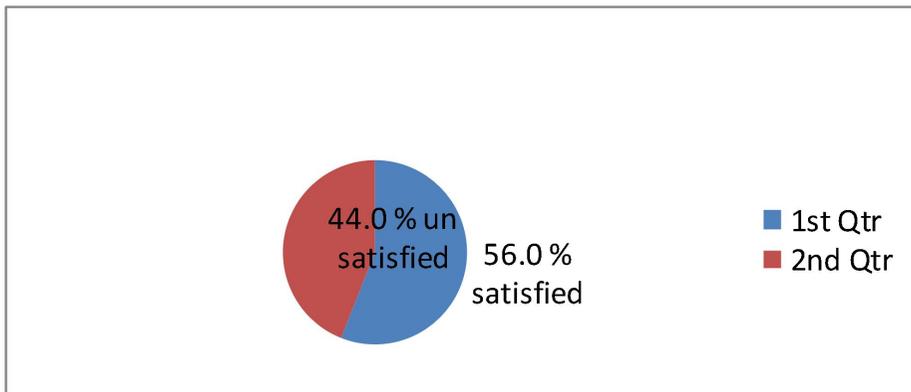


Figure (1): show that 56.0 % of mothers of sample had satisfied level of awareness with food allergy among their children, while 44.0% of mothers of sample had unsatisfied level of awareness with food allergy among their children.

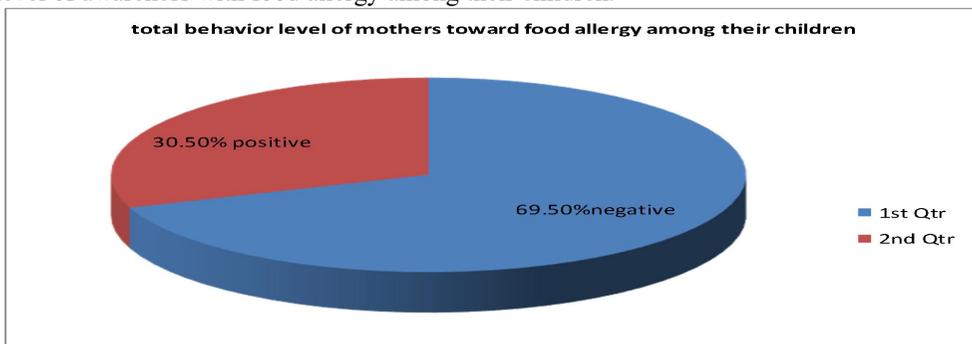


Figure (2): Distribution of mothers according to their Total behavior Level in relation to food allergies for their children.

Figure (2): show that 69.5% of mothers of sample had negative behavior toward food allergy among their children, while 30.5% of mothers of sample had positive behavior toward food allergy among their children.

Table (5): Table (10): Correlation between mothers life style and their awareness

mothers life style	n=730				Total No	r- Test
	mother awareness					
	Unsatisfied n=321		Satisfied n=409			
	No	%	No	%		
Poor	303	41.5	269	36.8	572	0.91**
Average	18	2.4	140	19.1	158	
Total	321	43.9	409	55.9		

▪ NS = Non significant r. > 0.05, significance difference r. ≤ 0.05, moderate significance difference r. ≤ 0.01, highly significance difference r. ≤ 0.001

Table (5): Illustrates that there were high significance relation between mothers life style and their awareness about food allergy among their children, at r < 0.001

Table (6): Correlation between mothers life style and their behaviors

Mothers life style	n=730				Total No	r- Test
	mothers behaviors					
	Negative n=507		Positive n=223			
	No	%	No	%		
Poor	446	61%	126	17.3%	572	0.86**
Average	61	8.5%	97	13.2%	158	
Total	507	69.5%	223	30.5%		

▪ NS = Non significant r. > 0.05, significance difference r. ≤ 0.05, moderate significance difference r. ≤ 0.01, highly significance difference r. ≤ 0.001

Table (6): Illustrates that there were high significance relation between mothers life style and their behaviors about food allergy among their children at r < 0.001

Table (7): Correlation between mothers life style and occurring Food allergy among their children

mothers life style	n=730				Total No	r- Test
	Food allergy					
	Yes n=43		No n=687			
	No	%	No	%		
Poor	29	3.9%	643	88.1%	572	0.92**
Average	14	1.9%	44	6.1%	158	
Total	43	5.8%	687	94.2%		

▪ NS = Non significant r. > 0.05, significance difference r. ≤ 0.05, moderate significance difference r. ≤ 0.01, highly significance difference r. ≤ 0.001

Table (7) : Illustrates that there were high significance relation between mothers life style and occurring food allergy among their children, at $r < 0.001$.

Table (8): Correlation between mothers characteristics and their awareness

Mothers characteristics	n=730				Total No	r- Test
	mothers awareness					
	Unsatisfied n=321		Satisfied n=409			
	No	%	No	%		
Age:						
21-25 Yrs	24	3.28%	7	0.95%	30	
26-30 Yrs	213	29.17%	207	28.35%	420	
31-35 Yrs	59	8.08%	121	16.57%	180	0.84**
36-40 Yrs	25	3.42%	75	10.27%	100	
Education:						
Can't read & write	61	8.35%	19	2.60%	80	
Reed, write	9	1.23%	3	0.41%	12	0.87**
Basic ed.	213	29.17%	206	28.21%	419	
Moderate ed.	18	2.46%	96	13.15%	114	
High ed.	20	2.73%	85	11.64%	105	
Mother Job						
Work	73	10%	73	10%	146	0.432
Not work	248	33.97%	336	46.02%	584	
Mother residence						
Rural	171	23.42%	398	54.52%	569	0.71**
Urban	150	20.54%	11	1.5%	161	
Total	321	43.97%	409	56.02%		

▪ NS = Non significant $r. > 0.05$, significance difference $r. \leq 0.05$, moderate significance difference $r. \leq 0.01$, highly significance difference $r. \leq 0.001$

Table (8): Illustrates that there were high significance relation between mothers characteristics and their awareness about food allergy among their children regarding age of mothers, academic qualification of mothers, and their residence, at $r < 0.001$, while there were no significance relation between mothers characteristics and their awareness about food allergy among their children regarding job of mothers at $r > 0.05$.

Table (9): Correlation between mothers characteristics and their behaviors

mothers characteristics	n=730 mothers behaviors				Total No	r- Test
	Negative n=507		Positive n=223			
	No	%	No	%		
Age:						
21-25 Yrs	28	3.83%	2	0.27%	30	
26-30 Yrs	351	48.08%	69	9.45%	420	
31-35 Yrs	94	12.8%	86	11.78%	180	0.82**
36-40 Yrs	34	4.65%	66	9.04%	100	
Education:						
Illiteracy	78	10.68%	2	0.27%	80	
Reed, write	10	1.36%	2	0.27%	12	0.85**
Basic ed.	358	49.04%	61	8.35%	419	
Moderate ed.	29	3.97%	85	11.64	114	
High ed.	32	4.38%	73	10%	105	
Mothers Job						
Work	112	15.34%	34	4.65%	146	0.375
Not work	395	54.10%	289	39.58%	584	
Mothers residence						
Rural	374	51.23%	195	26.71%	569	0.75**
Urban	133	18.21%	28	3.83%	161	
Total	507	69.45%	223	30.54%		

▪ NS = Non significant $r. > 0.05$ ◊ significance difference $r. \leq 0.05$ ◊ moderate significance difference $r. \leq 0.01$ ◊ highly significance difference $r. \leq 0.001$

Table (9): Illustrates that there were high significance relation between mothers characteristics and their behaviors about food allergy among their children regarding age of mothers, academic qualification of mothers, and their residence, at $r < 0.001$, while there were no significance relation between mothers characteristics and their behaviors about food allergy among their children regarding job of mothers at $r > 0.05$.

Discussion:

Gupta et al. (2010) reported that Parents of food-allergic children are responsible for risk assessment and management of their child's condition. Such practices are likely informed by parental knowledge, attitudes, and beliefs of food allergy.

The results of the current study as regards maternal demographic characteristics showed that more than half of mothers who shared in study sample

had basic education, a minority of mothers were able to read and write, about half of mother's age were between 26 years to 30 years, more than three quarters of mothers were not employed (table 1), This study clearly showed some sort of disagreement with the results of demographic characteristics study by **Gupta et al. (2010)** who investigated food allergy knowledge, attitudes, and beliefs of parents with food-allergic children in the United States, they reported that approximately one hundred percent of participants were women; the most of

mothers were self-identified as white, less than one quarter percent were as black, Asian., This study clearly showed some sort of disagreement with the results of ours study, this may be attributed to the same between study setting which affects the economic status and the educational level of the participants.

Also, The results of the present study revealed that more than three quarters of mothers of children with food allergy were from rural areas, this findings was agreed with **Gelaw Y et al. (2013)** who said that children from rural communities had highest risk of infection and severe diseases compared to children from urban communities.

Regarding to demographic characteristics of children as in part one table (2):

in this study, one third of children their ages were three years, less than one quarter of children their ages were two years, the most of children went to hospital for making examinations after 48 hours and this not agree In a population based study done by **Venter et al. (2010)**, the target children were 6 years old; there was no difference in response between the respondents and non-respondents in terms of sex, age or area of residence. The response pattern did not differ between the state and independent sector pupils.

According to socio demographic characteristics of mothers and their children as in part one table (1, 2):

In our study the result show that above half of mother's age were between 26 years to 30 years, and about two thirds of children were male, and one third of children were female and this result was disagreement with result In a study done

by **Knibb (2015)**, that show the mean age of the mothers was 38 years, and, more than half of the children were males and more than one third of them were females and the age of the children ranged from 2 to 9 years old.

According to anthropometric measurements of children as in part two table (3):

The anthropometric measurements of the children in the current study revealed that about two thirds of children's weight was 9 kilo grams, about half of children's height was 75 centimeters, the most of children's head circumference was from 44.5 to 48 centimeters, two thirds of children's chest circumference was below 43 centimeters, less than half % of children's abdominal circumference was from 52 to below 55 centimeters.

Anthropometric values are closely related to important factors such as age, nutrition, genetic makeup, environmental characteristics, social and cultural conditions, lifestyle, functional status and health. Anthropometric evaluation is an essential feature of geriatric nutritional evaluation for determining malnutrition, being overweight, obesity, muscular mass loss, fat mass gain and adipose tissue redistribution. Anthropometric indicators are used to evaluate the prognosis of chronic and acute diseases, and to guide medical intervention (**Sánchez - García et al., 2011**).

Meyer et al. (2016) highlighted the effect of food allergy on the growth parameters of the children in a prospective, observational study was performed at the tertiary gastroenterology department. Children aged 4 weeks–16 years. Growth

parameters pre-elimination were taken from clinical notes and post-elimination measurements (weight and length) were taken a minimum of 4 weeks after the elimination diet.

Regarding the distribution of mothers according to their awareness about food allergy as in part three table (4-a, 4- b, 4-c) :

In the current study, regarding the awareness of the mothers about food allergy among their children data showed that more than three quarters of mothers know the fact that food allergy is a type of allergy that affect their children, less than half of mothers know that food allergy maybe caused by fish, less than one quarter of food allergy that affected on children caused by fruits (strawberry, mango, banana), three quarters of children affected by food allergy caused by one food, less than one third of children affected by food allergy caused by multiple foods. Less than two thirds of children had symptoms of food allergy appeared within 3 hours, Less than two thirds of the studied sample had mild level of food allergy, the most of sample hadn't undergo food allergy previously and it was first time of food allergy symptoms to appears., And this result agreed with **Hill et al. (2010)**, who found similar allergy prevalence rates in young children in Australia and several countries in Asia (Hong Kong, China, Taiwan, Indonesia, Philippines, Malaysia, Singapore, Japan, Thailand). The major difference was that culprit allergenic foods for Asia were different. Prevalence rates of food hypersensitivity in Australian infants and children were less than one quarter of sample affected by food allergy caused by one food (egg, cow's milk, peanut, tree nuts and sesame, wheat, soy and fish).

Chiang et al. (2010) characterized food protein sensitization patterns in 227 children in Singapore who presented to an allergy clinic over 3 years with symptomatic allergic disease and at least one specific food allergen sensitization documented on skin prick testing. Egg, shellfish, peanut, fish, cow's milk, sesame, wheat and soy were the major culprits. Show that less than one half of the positive skin tests were positive to egg, more than one third to shellfish, less than one third to peanut, less than one quarter to fish, also less than one quarter to cow's milk, less than one quarter to (sesame, wheat and soy). Children having multiple food hypersensitivities and a family history of atopic dermatitis were found to be more likely to present with peanut allergy. Interestingly, shellfish sensitization was determined to be higher in children with allergic rhinitis who were sensitized to cockroaches (tropomyosin is a major allergen found in many shellfish and also insects like cockroaches).

Levin et al. (2011) reported 5% prevalence rate of food allergy in a cross-sectional study of 211 urban school black children of Xhosa ethnicity in South Africa. Foods which causing most allergies were egg white (3.3%), peanut (1.9%) and milk (1.9%). Wheat, soy and fish have been reported as common allergens.

In Ghana, a study of food allergy in 1, 407 school children found less than one quarter of 1, 431 children showed a positive reaction mostly directed against peanut and pineapple **Obeng et al. (2010)**. In another study, life prevalence of self-reported food allergy in Maputo, Mozambique was less than one quarter affected with food allergy caused by

seafood, fruits and vegetables Lunet et al. (2015).

Hossny et al. (2011) conducted a study of 100 children in Cairo (Egypt) said that less than one quarter of children diagnosed to allergic diseases and found positive skin prick tests with peanut. Less than one quarter of children diagnosed to food allergy caused by egg, fish, cow's milk, banana).

In Morocco, less than one quarter of 442 patients participating in a cross-sectional study in the Fes-Meknes region reported food allergies primarily to (eggs or peanuts or wheat) Ouahidi et al. (2010).

The most frequent allergenic foods were dairy products, egg, fish, shrimp, beans, soy, chili, mango, cacao, and strawberry. Major symptoms were coetaneous in more than half of patients, followed by gastrointestinal and respiratory. In a broader study on the prevalence of allergic diseases in Mexico City, allergic rhinitis was most frequently reported that less than half. Most important risk factors for allergic diseases were family history of atopic in first and second degree relatives, early consumption of cow's milk, early weaning with cereal, egg, beef, fish and pulses López et al. (2010).

The result of the present study showed that about three quarters from children were developed allergic reaction to one food, and nearly one quarter from children were developed allergic reaction to multiply food, this finding was disagree with Gupta R.S et al., (2010) who said that one third of children had developed tolerance to at least one food and more than three quarter were developed allergic reaction to multiples

Regarding the distribution of mothers according to their total awareness level for food allergy among children as in part three tables (5):

The result of the present study revealed that more than half of mothers of sample had satisfied level of awareness with food allergy among their children, this result was agreed with Gupta R.S et al. (2010) who reported score of participants knowledge was three quarter correct, and this study were in Chicago area.

Regarding the distribution of mothers according to their behaviors in relation to food allergy for their children as in part four tables (6):

In our results, of mothers according to their behaviors in relation to food allergies for their children showed that one hundred percent of mothers of sample let their children eat canned food, the majority of them hadn't attention on validity of food labeling and this finding was agreed with Laura P et al. (2010) who reported that just above one quarter of mothers who had children affected with food allergy, who read label of food validity and this study about nutritional behaviors and attitudes that was carried out at referral center of food allergy diagnosis and treatment, Veneto region in Paud (North Eastern Italy)., also the most of them hadn't wash food before eating, and, the most of them didn't educate their children about food allergy, in addition, the most of children of study had eaten food without inform their mothers about it and this finding was agreed with Laura et al. (2010) who reported that above half of caregivers reported that food allergy affected by meal preparation and this study about nutritional behaviors and attitudes that was carried out at referral

center of food allergy diagnosis and treatment, Veneto region in Paud (North Eastern Italy).

Regarding to distribution of mothers according to their total behaviors level regarding food allergy for their children as in part four tables (7):

According to the distribution of mothers according to their total behavior Level in relation to food allergies for their children the current study showed that about two thirds of mothers had negative behavior toward food allergy among their children while one third of mothers of sample had positive behavior toward food allergy among their children table (7), our result is in agreement with **Polloni et al. (2013)**

Conclusion:

Based on the results of the present study, it is concluded that:

The objective of the current study was to assess mother's awareness regarding food allergy among their children in a random sample of mothers who were regular attendant to outpatient clinics of both university hospitals and ministry of health affiliated hospitals. For this purpose, this study was a descriptive correlation study included 730 mothers who had children diagnosed with food allergy (from 1 to 5 years old). The tool of the study was an interviewing questionnaire which included Demographic Data, Growth and development child assessment tool, Medical history as well as Medical record review.

The results of the present study showed that, there was high significance

relation between mothers demographic data and their total awareness about food allergy among their children.

According to current study result there was highly statistically relation between total mothers awareness and their lifestyle for their children suffering from food allergy at $r < 0.001$

The finding of the current study showed that there was high significance relation between demographic data and their total behaviors about food allergy among their children regarding academic qualification of mothers, age of mothers, job of mothers, and their residence at $r < 0.001$.

Finding of current study showed that there was high significance relation between total mothers behaviors and their lifestyle for their children suffering from food allergy.

Finding of current study showed that there was significance relation between total mothers awareness and their total behaviors regarding their children suffering from food allergy through their total quality of life at $r < 0.001$.

Recommendations:

In the light of the findings of the study, the following recommendations are suggested:

increase awareness through health instruction to all mothers who visit outpatient clinic designed by nurses in outpatient clinic about how to protect them and their child from food allergy.

II. Mothers who have children suffering from food allergy must be educated about the importance of lifestyle

modifications such as taking breakfast, drinking water, activity practicing, and sleeping certain hours.

III. Educating the mothers who have child suffering from food allergy about early detection and management of food allergy.

References:

Bedolla Barajas M, Alcalá-Padilla G, Morales Romero J, Camacho Fregoso J, Rivera Mejía V (15Feb 2016) (A School Nurse's Guide to Kids' Health and Safety 2016) RNtoBSN.org

Peanut allergy in Mexican children: what is the effect of age at first consumption? Iran J Allergy Asthma Immunol. (1):53-61

CDC (June 17, 2015) Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion

Chiang WC, Kidon MI, Liew WK, Goh A, Tang JPL, Chay OM (2010) The changing face of food hypersensitivity in an Asian community. *Clin Exp Allergy.* ;37:1055–1061.

Gupta R S, Jennifer S K, Julia A B, Laura B A, Lakshmi S T and Jane L, Holl (2010): Food allergy knowledge, attitudes and beliefs: Focus groups of parents, physicians and the general public. *BMC Pediatrics* 2010, 8:36

Hill DJ, Hosking CS, Zhie CY, Leung R, Baratwidjaja K, Iikura Y. et al., (2010): The frequency of food allergy in Australia and Asia. *Environ Toxicol*

Pharmacol. 1997;4:101–110. doi: 10.1016/S1382-6689 (97)10049-7.

Hossny E, Gad G, Shehab A, El-Haddad A (2011). Peanut sensitization in a group of allergic Egyptian children. *Allergy Asthma Clin Immunol.* 2011;7:11–17.

Knibb RC. (2015): Effectiveness of Cognitive Behaviour Therapy for Mothers of Children with Food Allergy: A Case Series *Healthcare (Basel)*. 2015 Dec; 3 (4): 1194–1211.

Kristen D, Jackson, La Jeana D. Howie, Lara J. Akinbami, M.D., (2013 May). Trends in Allergic Conditions Among Children: United States, 1997–2011 *Recommend on Facebook* TweetNumber 121

Laura P, Alice T, Francesca L, Ileana , Francesca F, Dario G (10 Dec 2013), Nutritional behavior and attitudes in food allergic children and their mothers *Published online.* doi: 10.1186/2045-7022-3-41 *PMCID: PMC3878898 Clin Transl Allergy.* 2013; 3: 41

Lunet N, Falc o H, Sousa M, Bay N, Barros H (2015) Self-reported food and drug allergy in Maputo, Mozambique. *Public Health.* 2015;119:587–589.

Obeng BB, Amoah AS, Larbi IA, Yazdanbakhsh M, van Ree R, Boakye DA. et al., (2010) Food allergy in Ghanaian schoolchildren: data on sensitization and reported food allergy. *Int Arch Allergy Immunol.* 2010;155:63–73.

Ouahidi I, Aarab L, Dutau G (2010) The effect of thermic and acid

treatment on the allergenicity of peanut proteins among the population of the region of Fes-Meknes in morocco. *Rev Francaised'Allergol.* 2010;50 (1):15–21.

Panda R, Ariyaratna H, Amnuaycheewa P, Tetteh A, Pramod SN, Taylor SL, Ballmer-Weber BK, Goodman RE (Feb 2013). "Challenges in testing genetically modified crops for potential increases in endogenous allergen expression for

safety". *Allergy* 68 (2): 142–51. doi:10.1111/all.12076. PMID 23205714.

Sánchez-G S, GarcíaPeña C, Duque L, Juárez CT, Cortés-Núñez AR, (2011). Anthropometric measures and nutritional status in a healthy elderly population. *BMC Public Health.* 2011 Jan 3;7:2.

"Types of Allergic Diseases". NIAID. (29,May 2015). Retrieved 17 June 2015.