

Effect of Nutritional Guideline for Kindergarten Teachers on Healthy Physical Growth of Preschool Children

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Abstract:

Background: Early childhood is a critical time for the development of food preferences and eating patterns. Preschool is the perfect setting to educate children on the principles of good nutrition. The nutritional knowledge and awareness of preschool teachers are one of the most important factors affecting preschool children's nutritional habit. So

The aim was: To study the effect of nutritional guideline for kindergarten teachers on healthy physical growth of preschool children.

Design: Using cross sectional study, quasi-experimental design, one group study.

Setting: Study was conducted in Shebin El-kom City Menofia Egypt at Private and Governmental kindergarten

Sample: A convenience sample include 15 kindergarten teachers and 240 children aged 3-6 years.

Tools: Three tools were used for teachers' knowledge related to healthy nutrition ,the second tool was a nutritional rating scale designed by Baker and Khalder (2007) for the teachers' nutritional practice and third tool was a questionnaire sheet for preschool children developed and validate by researcher .

Results: As regards to sample Sociodemographic characteristics (60% and 75%) of kindergarten teachers were aged from 20 to less than 30 years the majority (60% and 100%) of them has a bachelor degree of education in private and governmental kindergarten respectively also most (75% and 80%) of them were married. The majority(94%) of children aged from 4-5 years, the number of girls exceed than boys. It was revealed that highly statistical significant improvements in teachers' knowledge and practice post educational nutritional guideline at ($P < 0.05$) in each private and governmental kindergarten. There was a correlation and a highly statistically significant difference between teachers' nutritional knowledge , practice and physical growth of preschool children at p value < 0.05 .

Conclusion: It was concluded that nutritional guideline improve kindergarten teachers' knowledge and practices where it was positively affect on physical growth of the preschool child as it was prevent childhood malnutrition and promote healthy physical growth. So it was

Recommended that: Provide nutritional training for the teachers about healthy nutrition for the preschool children and integrate nutritional courses for the preschool curriculum in the kindergarten to learning good food habits and practices include preventing buy any candy foods like gas drinks or chips in the Kindergarten.

Key Words: Preschool Children, Nutrition, Physical Growth, kindergarten teachers

I. Introduction

Nutrition is one of the basic needs of life. Nutrition education in the early years of life, particularly in the preschool period, is very important for an individual's health throughout life. Nutritional experiences at a young age influence nutritional habits in adulthood. For this reason, nutrition education should be continuous, effective and directed towards all family members.¹

Teachers are one of the most influential groups in elevating social health awareness , and their teaching nutritional points to the students can both affect students' awareness and the transferring of such nutritional education to the families.¹⁻²

Thus preschool period is a time when children develop many habits likely to continue in adulthood. It is important that children not only acquire knowledge about appropriate and balanced nutrition, but also develop good eating habits.³ Teachers should have a background of each child's nutritional needs, and they should discover any malnutrition problems that should arise.⁴

Improving the diet habits of preschool-aged children is an important public health goal. Preschool educators may be agents of change for improving children's diets. So the role of kindergarten teacher is not limited to teaching and indoctrination but that a replacement role of the mother in terms of dealing with the children left their mothers and their homes for the first time, and found themselves in a new and unfamiliar environment so the mission is to help them to adapt and harmony.⁵

Positive role modeling correlates with an increased interest in food and less food fussiness among children.⁶ Poor role models influence children's perceptions of foods and mealtimes For example, negative

comments about the taste or texture of a food will make a child less willing to try it. On the other hand, a child is more likely to try a food if he or she observes an adult enjoying it.⁷

Teachers and caregivers become role models by engaging with children at mealtime and sitting down and eating with them. This practice is often called family-style dining. When early childhood programs provide meals, teachers and staff can model healthy eating behaviors by eating the same foods the children eat.⁸

Everyone caring for children needs to be aware that some food strategies have negative effects on the development of eating behaviors. Food practices involving pressure and restriction may not only affect childhood health but also have long-lasting implications, such as problematic behaviors of binge eating and dietary restraint among adults.⁹

A supportive, caring early childhood environment offers guidance through adult modeling, serving a variety of nutritious foods at meals and snacks, and exposing children to new foods in the classroom. These practices encourage children's development of healthy eating and behaviors and promote positive physical growth.^{9,10}

Aim of the study was :To study the effect of nutritional guideline for kindergarten teachers on healthy physical growth of preschool children

Hypothesis

The nutritional knowledge and practices of a kindergarten teachers will reflects positively on healthy physical growth of the preschool children .

II. Subjects and method

I-Design: A Quasi-experimental design was utilized . It was started from first of September to the end of November 2012.

II-Setting: Study was conducted in Shebin El-kom City Menofia , Egypt at Private and Governmental kindergarten.

III-Sampling: A convenience sample of 15 kindergarten teachers and 240 preschool children aged 3-6 years.

VI-Tools of the study: Data were collected through adopted structured questionnaire developed by Baker and Khalder (2007) and nutritional practice rating scale developed by Magied (2007) for the teachers. Tool three a questionnaire to the preschool children designed by researcher .

Tool one was related to socio-demographic data : includes seven main themes as follows: Axis I: General data for the teachers include: Age, stage studied, level of education, specialty, number of courses in the field of kindergarten, Marital status.

The second axis: the measurement of nutritional information of the teachers includes: General questions in the foundations of nutrition and food science and the importance of certain nutrients and some dietary needs and food habits. and the number of questions is fifty questions . Each question has been given degree evaluation was on the following basis: from high diet knowledge is scored 35 -50 degrees, average diet knowledge is scored less than 35 -20 degrees less than 35 to 20 degree and less than 20 degrees diet low knowledge.

The questionnaire also included ten questions describes the dietary practices of the teachers during its dealings with the child and give each of them so that the degree of assessment as follows: 7 degrees incomplete practices, less than 7 up to 4 degrees moderate health practices, less than 4 degrees wrong practices. Axis III: nutritional practices for the parameter included: Some dietary habits for the teachers such as the usual food intake, the number of meals eaten during the day, cooking methods used, the amount of water intake during the day, favorite foods. Theme IV: food intake in the 24 hours preceding: It is a record intake of foods during the previous day and was one day only goal is to see how the application of nutritional information parameter and compared the level of customs and food knowledge.

Special resolution to children: The first Axis include : General data on child 's Sex, age, growth stage , the number of absence times during the last week of data collection, the reason for absence, the mother worked, the educational level of the mother.

The second axis of health data and anthropometric measurements of children included: Height, weight, head circumference, chest circumference, mid-upper arm circumference, wrist circumference of it was extracted body size and that the following equation: Body size = length \div Wrist circumference if body size is more than a small 11.0 Body size from 10.1 to 11.0 average Body size is less than a large 10.1

The health data included a question about some of the diseases that have been infected with the child, such as: dental caries, impaired vision, poor appetite, obesity, slimming, skin diseases, diseases waistcoat, diabetes, developmental delay, bone diseases, allergy to a particular type of foods.

And also the question of basic vaccinations for children, which was not given to him. Some dietary practices of the child during the school day included: Breakfast at home, breakfast ingredients in the school etc.

Preparation and organizational guideline :

Nutritional educational program's sessions were prepared by the researcher. The content of the sessions was based on review of literature.

The objective

Identify the effect of implementing the nutritional guideline for preschool teachers on their knowledge, practices and awareness regarding nutritional needs of preschool children.

This objective can be achieved by the following sub-objectives:

1. Identify some of the public and economic data for the teachers .
2. The study of consciousness and food practices for kindergarten teachers.
3. Identify some health data and some physical standards for children.
4. Study effect nutritional knowledge of the teachers on healthy children.
5. Design guidebook diet to educate kindergarten teachers.

2- Educational Guideline of Nutritional Strategies

A- Different methods of instructions were adopted. These include brain storming , power point presentation, and group discussion.

B- Teaching aids: Different aids were used to facilitate and illustrate teaching such as posters, handouts, food models and real natural food stuffs.

3- Implementation phase: This included the implementation of the planned educational nutritional guideline. The questionnaire (pretest) was distributed to the teachers and their students before conducting nutritional guideline. The data were collected during their free time, (pretest) lasted 4 weeks, where all students were divided into 4 groups at private kindergarten and 5 groups for governmental kindergarten and each group have two time nutritional group discussion , each one lasted 50 minutes using different educational methods brain storming, lecture, power point presentation and discussion.

4-Evaluation phase: Assessment was done immediately after the completion of the educational nutrition guideline by using posttest.

Validity test was done for data collecting tools by three assistant professor of Kindergarten faculty expertise staff , two assistant professor of education faculty ,two professor of pediatric nursing and one professor of community health nursing .Validity was 96% for developed tool and 98% for adopted and adapted tool .

Ethical consideration: The researcher emphasized to the teachers that the study was voluntary and anonymous. Teachers and preschool children had the full right to refuse to participate in the study at any time.

Pilot study :A pilot study was carried out on 5 teachers and 20 preschool children to test the applicability of tools clarity and simplicity of tools included as well as to estimate the average time needed to fill in the sheets. Those who shared in the pilot study were excluded from the main study sample.

Method of data collection:

1-Written Permission: An official permission was obtained.

2-Tool Development: a.Two tools were adopted and adapted for teachers also one tool for children was developed by the researcher for data collection. b. Reliability of the tool was determined to assess the extent to which items in the questionnaire were related to each other by Cronbach's co-efficiency alpha test ($r= 0.68$).

3-Protection of Human Right: An acceptance to share in the study was obtained from parents before participation in the study. Confidentiality and privacy were assured by telling the kindergarten teachers that the collected data was not going to be used for other non research purposes.

Statistical design:

The statistical analysis of data was done using the excel program and the statistical package for social science (SPSS) program version 17. The first part of data was a descriptive one. Data were revised, coded, and statistically analyzed using the proportion and percentage, the arithmetic mean ± standard deviation (SD) .

III. Results

Table (1): Percentage distribution of teachers and their children in relation to their socio -demographic characteristics in Private and Governmental Nursery schools

	Item	Private Nursery schools		Governmental Nursery schools	
		No.	%	No.	%
Teachers	Age (years)				
	20-	4	66.67 %	5	55.56%
	30-	1	16.67 %	2	22.22 %
	40-	1	16.67 %	2	22.22 %
	Education				
	Diploma	0	0%	3	33.33 %
	Bachelor	6	100%	6	66.67 %
	Specialization				
	Kindergarten	2	33.33 %	4	44.44 %
	Public Education	4	66.67 %	5	55.56 %
	Nutritional Courses				
	Yes	2	33.33%	3	33.33%
	No	4	66.66%	6	66.66%
	Marital Status				
	single	2	33.33 %	2	22.22 %
	Married with children	3	50%	4	44.44 %
	Married without children	1	16.67 %	3	33.33 %
Children	stage				
	Students' number at KAG1	45	53.6 %	52	33.33 %
	Students' number at KAG2	39	46.4 %	104	66.7 %
	Gender				
	Boys	47	56.00 %	65	41.7 %
	Girls	37	44.00 %	91	58.3 %
	Age				
	4-5	78	92.86 %	142	91.02 %
	> 5	6	7.14 %	14	8.98 %
	Number of absences per week				
	None	71	84.52 %	116	74.4 %
	1-2 days	11	13.09 %	34	21.8 %
	3-6 days	2	2.38 %	6	3.8 %
	Work status of mother				
	Housewife	25	29.8 %	10	6.4 %
	worker	20	23.8 %	99	63.5 %
	Employees	39	46.4 %	47	30.1 %
Education Level of Mother					
Read and Write	11	13.1%	12	7.7 %	
Moderate Education	42	50.0%	27	17.3 %	
High Education	31	36.9%	117	75.00 %	

Table (1):Describe socio demographic characteristics of the sample where (60%,75%) of kindergarten teachers were aged from 20 to less than 30 years the majority (60%100%) of them has bachelor degree of education private and governmental kindergarten respectively also most (75%,80%) of them were married. The majority(94%) of children aged from 4-5 years, the number of girls exceed than boys.

Table (2) : Mean an Stander Deviation of teachers' nutritional knowledge and their sources of nutritional information Pre and Post nutritional guideline .

Item	Private Nursery schools			Governmental Nursery schools		
	Mean± SD		P	Mean± SD		P
	Pretest	Posttest		Pretest	Posttest	
Nutritional knowledge	1.00 ± 0.00	2.62±0.67	0.003***	1.00±0.23	5	0.002***
Sources of nutritional information						

*** : Significant P < 0.05

Many sources=High knowledge ***** books , Newspapers and magazines, TV programs, Nutrition courses, Radio programs, Studying and Internet . Some sources=Moderate knowledge **** books , Newspapers and magazines, TV programs, Nutrition courses. One source =Low knowledge ** books , Studying

Table (2) revealed that the mean and stander deviation of nutritional knowledge for both teachers group of private and governmental kindergarten were highly statistically significant at $p < 0.05$ (post intervention than pre intervention sessions of nutritional guidance. As well as there was highly statistically significant P value equal (0.004) and (0.001) of both private and governmental kindergarten respectively as regards to sources of nutritional information.

Table (3): The mean and stander deviation of teachers’ nutritional practices about some nutritional habits pretest and Posttest nutritional guideline for Private and Governmental Nursery schools

Items	Private Nursery schools			Governmental Nursery schools		
	Mean \pm SD		P Value	Mean \pm SD		P Value
	Pretest	Posttest		Pretest	Posttest	
Expenditure money on food	2.33 \pm 0.816	2.00 \pm 0.00	0.030***	2.78 \pm 1.202	2.00 \pm 0.000	0.004***
Eat with family	1.33 \pm 0.816	1.00 \pm 0.000	0.018***	1.67 \pm 1.000	1.22 \pm .667	0.003***
The number of meals per day	2.50 \pm .548	2.33 \pm .516	0.009***	2.78 \pm .441	2.11 \pm .33	0.003***
Deleted meals	2.67 \pm 0.516	3.00 \pm 0.00	0.030***	2.11 \pm .782	3.00 \pm 0.00	0.005***
Eating place	1.67 \pm .816	1.33 \pm 0.816	0.030***	2.00 \pm .100	1.00 \pm 0.00	0.002***
Adding a lot of spice to the food	1.83 \pm .41	2.00 \pm 0.00	0.000***	1.33 \pm .50	2.00 \pm 0.00	0.021***
The number of cups of water per day	2.50 \pm .55	2.83 \pm .408	0.001***	2.33 \pm .50	2.89 \pm .33	0.005***
Cooking by new methods of food	1.83 \pm .98	1.17 \pm .408	0.002***	1.67 \pm .707	1.33 \pm .70	0.002***
Methods of cooking	1.67 \pm 1.03	1.18 \pm .409	0.003***	1.44 \pm 0.527	1.11 \pm .33	0.001***
Foods in the last 24 hour	1.50 \pm .548	1.60 \pm 0.00	0.001***	1.67 \pm .50	1.12 \pm .34	0.000***

*** Significant: $P < 0.05$

Table (4): Clarify that increase in physical measures of preschool children of both private and governmental kindergarten post educational nutrition guideline . There was highly statistically difference at $P < 0.05$ as regards

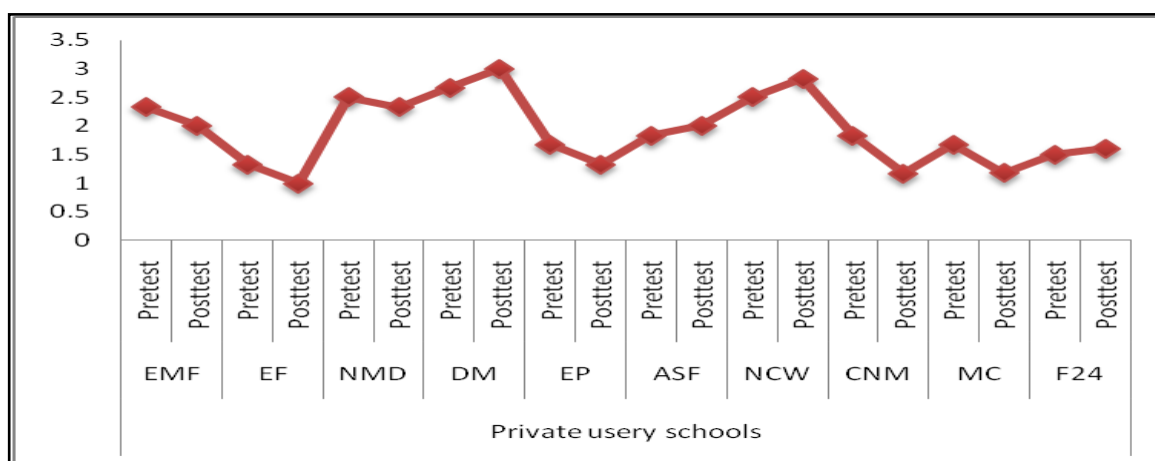


Fig. (1A): Showing the mean of teachers’ nutritional habits pretest and Posttest in Private Nursery schools .

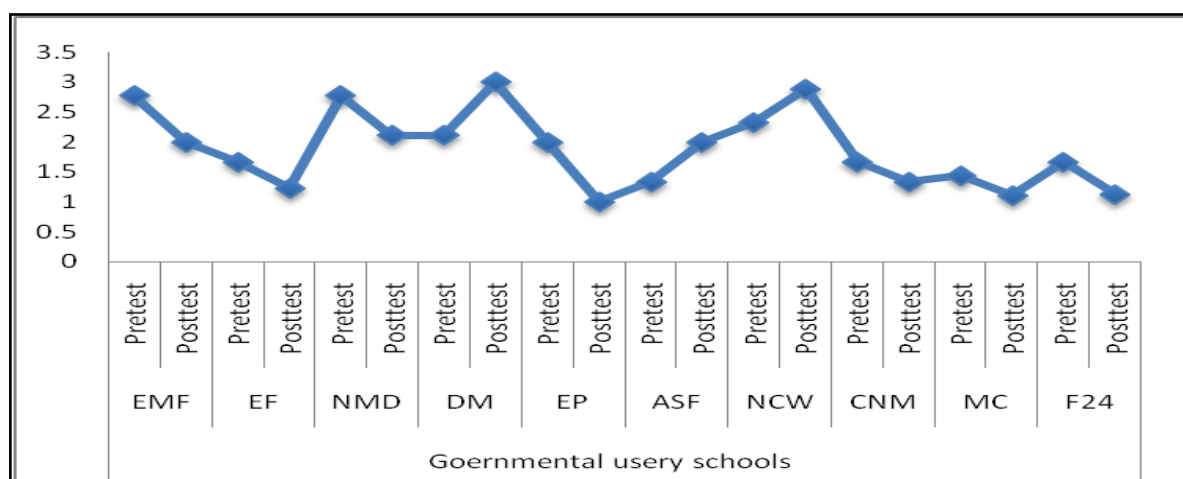


Fig.(1B): Showing the mean of teachers' nutritional habits pretest and Posttest in Governmental Nursery schools .

Table (5) Distribution and percentage of teachers' nutritional habits practices pretest and Posttest for Private and Governmental Nursery schools

Item	Private Nursery school				Governmental Nursery school			
	Pretest		Posttest		Pretest		Posttest	
	No.	%	No.	%	No.	%	No.	%
Expenditure money on food								
Buy fruits	5	83.3%	6	100%	6	66.7%	9	100%
Buy meats	1	16.7%	0	0%	2	22.2%	0	0%
Buy sweat	0	0%	0	0%	1	11.1%	0	0%
Cup of water drinking per day								
3 cups	3	50%	1	16.7%	6	66.7	1	11.1%
4 cups	3	50%	5	83.3%	3	33.3%	8	88.9%
Methods of cooking								
Grill food	4	66.7%	5	83.3%	5	55.6%	8	88.9%
Boiled food	2	33.3%	1	16.7%	4	44.4%	1	11.1%
Foods in the last 24 hour								
Healthy (contain 4 food group)	3	50%	6	100%	3	33.3%	8	88.9%
Unhealthy (take away)	3	50%	0	0%	6	66.7%	1	11.1%

Table (5): Illustrate distribution and percentage of teachers' nutritional habits practices pretest and posttest for Private and Governmental Nursery schools. It was clear that the majority(83.3%, 66.7%) of teachers Expenditure money on food to buy fruits pre nutritional guideline in private and governmental preschool respectively compared to 100% post guideline. Regards numbers of drink water per day (50% ,33.3%) of teachers pre educational guideline compared with (83.3%,88.9%) of teachers as post test drink 4 cup of water per day in private and governmental preschool nursery respectively .The majority of them (100% and 88.9%) eat healthy food in the last 24 hours contain four food group post nutritional guideline compared with only(0% and 11.1%) eating unhealthy food (take away).This reflect effect of nutritional guideline on nutritional habits practices of kindergarten teachers.

Table (6): Mean and standard deviation of Physical Measurements , Healthy breakfast Habits of Children Pretest and Posttest in Private and Governmental Nursery schools.

Items	Private Nursery schools			Governmental Nursery schools		
	Mean ± SD		P Value	Mean ± SD		P Value
	Pretest	Posttest		Pretest	Posttest	
Height (Cm)	107.77 ± 6.70	108.68± 6.56	0.02***	107.84±7.42	108.63±7.43	0.021***
Weight (Kg)	20.49±3.29	22.83±3.35	0.002***	18.51±3.34	20.13±3.38	0.011***
Head Circumference (Cm)	50.86±1.95	51.14±1.96	0.002***	50.74±2.35	51.27±2.47	0.022***
Chest Circumference (Cm)	57.27±3.55	57.60±3.55	0.001***	57.09±4.00	57.57±3.76	0.031***
Mid Arm Circumference (Cm)	19.99±1.94	20.26±1.96	0.003***	19.67±2.59	19.99±2.81	0.03***
Wrist Circumference (Cm)	15.12±2.41	15.74±2.45	0.002***	13.16±1.74	13.39±1.74	0.002***
Body Size (Cm3)	1.00±0.00	1.08±0.00	0.03***	1.03±0.16	1.09±0.25	0.002***
Healthy breakfast	1.24±0.84	7.00±0.00	0.001***	2.20±1.67	6.98±0.24	0.001***

*** : Significant P < 0.05

Table (6) Proved that there was highly statistical difference between pre and post nutritional guideline as regards to physical measurement as (Height , Weight ,Head Circumference , Chest Circumference , mid arm Circumference , Wrist Circumference and Body Size at p value < 0.5 as (0.02, 0.002, 0.002 , 0.001, 0.003, 0.002 and 0.03) for private nursery school compared with (0.021, 0.011 , 0.022 , 0.031, 0.03, 0.002 and 0.002) for governmental nursery school when healthy breakfast habits established post educational guideline at p value 0.001 for private and governmental nursery school. This mean that the health breakfast habits the healthy physical measures of preschool children

Table (7) Correlation of teachers' nutritional knowledge and practice and healthy physical growth of preschool children

Items	Private Nursery schools			Governmental Nursery schools		
	Mean ± SD		P Value	Mean ± SD		P Value
	Pretest	Posttest		Pretest	Posttest	
Nutritional knowledge	1.00 ± 0.00	2.32 ± 0.55		1.00±0.23	2.62±0.67	0.003***
The number of meals per day	2.50±.548	2.33 ±.516	0.009***	2.78 ±.441	2.11 ±.33	0.003***
Deleted meals	2.67 ±0.516	3.00 ±.000	0.030***	2.11 ±.782	3.00 ±.000	0.005***
Cup of water drinking per day	2.50±.55	2.83 ±.408	0.001***	2.33 ±.50	2.89 ±.33	0.005***
Cooking by new methods of food	1.83±.98	1.17 ±.408	0.002***	1.67 ±.707	1.33 ±.70	0.002***
Methods of healthy cooking	1.67±1.03	1.18 ±.409	0.003***	1.44 ±0.527	1.11 ±.33	0.001***
Foods in the last 24 hour	1.50±.548	1.60 ±0.00	0.001***	1.67 ±.50	1.12 ±.34	0.000***
Height (Cm)	107.77± 6.70	108.68± 6.56	0.02***	107.84±7.42	108.63±7.43	0.021***
Weight (Kg)	20.49±3.29	22.83±3.35	0.004***	18.51±3.34	20.13±3.38	0.011***
Body Size (Cm3)	1.00±0.00	1.08±0.00	0.03***	1.03±0.16	1.09±0.25	0.002***

*** Significant: P < 0.05

Table (7) Interpret correlation between teachers' nutritional knowledge , practice and physical growth of preschool children . It was found highly statistically significant difference between teachers 'nutritional knowledge , practices and healthy physical growth of preschool children at P. value <0.05 .

IV. Discussion

The aim of this research was to study the effect of nutritional guideline for kindergarten teachers on healthy physical growth of preschool children. This aim can proved that the nutritional knowledge and practices of a kindergarten teachers will reflects positively on healthy physical growth of the preschool children .

Children grow at a steady rate during the kindergarten and early school years.^{7,9} This slower growth rate is reflected in a decrease in appetite and less interest in food. This fact agree with research results where mean and stander deviation for physical growth of study sample children through three months were 107.77 ± 6.70 regards pre test of nutritional guideline compared to 108.68± 6.56 post test regarding length, 20.49±3.29

pretest weight and 22.83 ± 3.35 post test as well as least physical measures as Head Circumference 50.86 ± 1.95 pretest and 51.14 ± 1.96 post test for private and governmental preschool.

It is the fact that foods are very important to all the human to obtain good nutritional status in all stages of the age especially the child development and growth. The teachers' food habits affect on the children food habits in the preschool.^{8,9}

Nutrition is fundamental for growth and development from conception to adulthood. It is essential for health and quality of life at every stage. Many preschools do not have a well-developed food, nutrition and physical activity program. Children at preschool age are not responsible for their food supply and the quality of their nutrition. However, they cognitively ready for learning about food nutrition and positive health habits.^{10, 11,12}

The finding of the study shows that teachers has good knowledge about nutritional reflect on child's growth and health status this finding in the same line with Tedstone al., (2009) who mentioned that children level of understanding was positively correlated to, caregivers' age and level of their education about nutrition knowledge.¹⁰

The present study show that the studied sample mean score of pretest knowledge was 1.00 ± 0.00 pre test and 2.62 ± 0.67 post test at P.value 0.003 to private kindergarten which was considered fair regarding preschooler's food likes and dislike, as well as 1.00 ± 0.23 pre test and 2.32 ± 0.55 post test at P.value 0.003 for governmental kindergarten the conditions motivate the child for feeding and enhancing child's vegetable preferences. These finding was in agreement with Korwanich et al (2007) that he found the school teacher were concerned with specific type of eaten by children.^{11,12,13,14}

Planned opportunities for preschool children during providing meal is very important in learning healthy nutritional habit experiences during meal time as an good opportunity for nutritional education in the every kindergarten day care centers, these activities must use various method of teaching to enhance proper preschoolers learning experiences.^{15,16}

Several studies have shown that knowledge of nutrition has increased after nutrition education programs for preschoolers.^{17, 18, 19} Man Queenie, (2008) found that preschool children's preferences could be increased when foods were used as rewards or with non-contingent adult attention also found that familiarity with foods was the most important factor in food preferences of three-year-olds.^{20,21,22}

Easley, (2012) concluded that children's preferences and ability to identify vegetables was related to whether the vegetables were served frequently at home or at the day care center. The day care center or preschool can be a critical factor in influencing children's food habits.^{22,23}

A number of strategies can be adopted to encourage good eating habits and monitor food intake . Establish routines where the child and caregiver sit down together and talk during meal times and snacks. Establish habits such as milk with a meal and water at bedtime that will help ensure variety and nutritional adequacy. Keep a 'snack-box' in the fridge or on the kitchen bench containing healthy snack foods such as pieces of fruit, vegetables, cheese and small sandwiches, that the child can either use independently or have offered to them. This helps to monitor what the child is eating between meals. Introduce the practice of having the child at the table for meal times as soon as he or she is able to sit up and grasp foods. Do not give the child too large a serving. It is better to offer small amounts and have more available if they want it. Provide foods the child likes, plus a new food to try. Be accepting if the child does not like particular foods, but remember that likes and dislikes change over time. Do not avoid serving a food that the child dislikes but that the rest of the family likes: continue to serve it, placing only a small amount on the child's plate, and accept it if they do not eat it.^{24,25}

V. Conclusion

It was concluded that nutritional guideline improve kindergarten teachers' knowledge and practices where positively affect on physical growth of the preschool child as it was prevent childhood malnutrition and promote healthy physical growth.

VI. Recommendations

1. Provide nutritional training for the teachers about good nutrition to the preschool children.
2. Provide dietary services to recognize the preschool malnutrition disease and put the treatment healthy programs for them.
3. Apply nutritional programs to the fathers and mothers about the recommended daily allowances and good healthy nutrition to the preschool children.
4. Preventing buy any candy foods like gas drinks or chips in the Kindergarten.
5. Making nutritional programs to the teachers about dental care in the preschool children.
6. Integrate nutritional courses to the children in the kindergarten to learning good food habits and practices.

References

- [1]. Baker K. and Khalder R. (2007) The Effect of the Nutritional Awareness and Practices for A sample of Kindergarten Teachers on Growth of Children in Jeddah. College of home economics and Art Education and Applied Nutrition in Jeddah.
- [2]. Iannellib V. Preschoolers Child Development, Developmental Milestones. 2006. Available at: www.about.com
- [3]. Wisconsin Nutrition Education Program. Developmentally appropriate nutrition education for youth ages 6-11. 2007 [cited 2007 Oct 12]. Available from: <<http://www.uwex.edu/ces/wnep/files/03resyth.pdf>>.
- [4]. New Jersey Kindergarten Implementation Guidelines. 2011 Available at: <http://www.nj.gov>
- [5]. Miguel E, Gleww P. The impact of child health and nutrition on education in less developed countries. Elsevier, St. Paul, USA. Handbook of Development Economics.2008;4
- [6]. Huybrechts I, Matthys C, Vereecken Cetal. Food intakes by preschool children in Flanders compared with dietary guidelines. *Int J Environ Res Public Health*. Dec 2008;5(4):243-57.
- [7]. Preschool Nutrition. Keep Kids Healthy, 2011. Available at: www.keepkidshealthy.com.
- [8]. Linda D, Josephine U. Early childhood teachers and staff members perception s of nutrition and physical. *J of research in childhood education publisher* 2010; 24 (3).
- [9]. New Jersey Kindergarten Implementation Guidelines. 2011 Available at: <http://www.nj.gov/>
- [10]. Tedstone A, Aviles M and Daniels L. Effectiveness of interventions to promote healthy eating in preschool children aged 1-5 years. 2009. Available at: www.nice.org.uk
- [11]. Korwanich K, Sheiham A and Srisuphan W. Awareness of Parents, Teachers and School Board Members Regarding Healthy Eating: A Qualitative Investigation of Lay Thai People's Perspectives. *J Med Assoc Thai*. 2007;90:5.
- [12]. Fhumudzani L. Impact of a nutrition education program on the nutritional status of children aged 3 to 5 years and the nutritional practices and knowledge of their caregivers in rural Limpopo Province, South Africa. PHD thesis. Faculty of Health Sciences. Department of Nutrition & Dietetics University of the Free State 2011.
- [13]. Nancy C and Connie V. Educating early childhood teachers about nutrition: a collaborative venture. *Childhood Education*.2007; 83: 4.
- [14]. Magjed A. Assessment of Knowledge, Attitude and Practices of the Teachers of the Preschool age About Nutrition. *Jor / Dec*, 2007.
- [15]. Aktaş N, Angin E and Karakuş O. The preschool education web-sites and nutrition education activities: An assessment by prospective teachers. *Scientific Research and Essays*.26 August, 2011; 6(17).
- [16]. Lynch M. Children at Play: An Innovative Method for Studying and Teaching Nutritional Behaviors *Pediatric Nursing* May-June 2012; 38, (3)
- [17]. American Dietetic Association. Position of the American Dietetic Association: Benchmarks for nutrition in child care. *J Am Diet Assoc* 2011;11:607–615.
- [18]. Snyder TD, Dillow SA. Digest of Education Statistics 2009 (NCES2010-013). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education,2010.
- [19]. North Carolina Nutrition Education and Training Program. (2007). Kindergarten an integrated nutrition curriculum. Retrieved 06.07.2011 from http://www.eatsmartmovemorenc.com/FoodForThought/Texts/fft_kindergarten.pdf
- [20]. Man Queenie, P. (2008). A case study on the implementation of the project approach in two kindergartens in Hong Kong. Unpublished master thesis, University of Hong Kong.
- [21]. Health Canada (n.d) Introduction to healthy eating, healthy eating session. Retrieved 05.07.2011 from 84 http://www.healthyalberta.com/Documents/Snacktivity_Box_healthy_eating_section.pdf
- [22]. Easley M.F. (2012) Food for thought, kindergarten an integrated nutrition curriculum. Retrieved 03.07.2011 from Department of Nutrition And Health Services, <http://www.eatsmartmovemorenc.com/FoodForThought/Texts/fft-kindergarten.pdf>
- [23]. British Nutrition Foundation (2007) Teachers' guide, food and farming: 5-7 years. Retrieved 02.07.2011 from <http://www.cfbt.com/lincs/pdf/Food%20a%20fact%20of%20life%20KS1.pdf>
- [24]. Aktaş, N. and Angin, D. E. (2011). Nutrition education and food services in preschool education institution: Spain and Turkey. *Revista Espanola de Nutricion Comunitaria-Spanish Journal of Community Nutrition*, 17(1); 6-12 (in Spanish).
- [25]. Ghoneim EH, Hassan MH & Amine EK (2007) An intervention programme for improving the nutritional status of children aged 2–5 years in Alexandria. *East Mediterr Health J* 10, 828–843.