

## Health Needs among Preschool Children in Rural Areas

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### Abstract

**The aim of this study was to:** Assess health needs among preschool children in rural areas. **Setting:** Governmental Nursery School in Gharbiya Governorate Tanta Basyoun center, which about 38 Governmental Nursery School. **Sample:** A multi stage sampling will be used in this study to get study participants and the final sample size was (200) participant. **Tools:** First tool, Structured interviewing questionnaire by the investigator to assess socio-demographic data, current health status for preschool child, mother's knowledge regarding health needs & problems of their preschool child, mother's practices. Second tool, Observational checklist to assess growth and development through Anthropometric measurements. **Results:** The mean age of the studied children was  $4.2 \pm 0.81$ , more than half of them were males. More than half of mothers were satisfactory in total knowledge. More than half of preschool children didn't have health problems. More than half of mother's reported practice was always in physical health needs, psychological, social, and cognitive and security needs and the majority of studied children were normal in their total growth and development. **Conclusion:** There was a highly statistically significant relation between socio-demographic characteristics and mother's knowledge regarding health needs & problems among their preschool children. Also, there was highly statistically significant relation between total practice with age of mother, Mother education level and mother's job. There was positive statistically significant correlation deference between total knowledge and Total practice, negative statistically significant correlation deference between total knowledge and Total health problems and negative statistically significant correlation between Total practice and Total health problems. **Recommendations:** Counseling programs for mothers to improve their knowledge and practice toward achievement of health needs for their preschool children, Provide proper health education for mothers to improve their practices toward resolving any problem may face their preschool children. Particular effort should therefore be made to ensure this knowledge is rightly acquired. Other means of knowledge acquisition for mothers who do not have a formal education or cannot complete education above primary school should be employed. More importantly, programs should identify which child care practices should be encouraged to enhance maternal and child nutrition and health; promoting such could mitigate the negative association of mother's lack of education with children's health. Finally, adult education through behavioral change communications would be an effective means for reaching out to poor and less educated Nigerian women. -Follow up frequently to early detection of health problems and unachieved health needs of preschool children in all nursery school all over the government.

**Keywords:** Health Needs, Preschool Children, Rural Areas.

### Introduction

Preschool is the one at age of 0-5 years. Others restricted this age to the child aged 3-5 years. Pediatricians classified age from 0-3 years in to two periods, i.e. Infancy from 0-1 year and toddler from 1-3. In this review, the

preschool child is the one at age 0-5 years (Greg and Katherine, 2015).

Preschool is an educational establishment or learning space offering early childhood education to children between the

ages of three and five, prior to the commencement of compulsory education at primary school (Senay, 2012).

Preschool child health needs are the basics of keeping children healthy, which include physical, mental, and social wellbeing. Like offering them healthy foods, making sure they get enough sleep and exercises and insuring their safety. These needs could be classified into biological, psychological, moral, social wellbeing and educational needs. In addition to nutritional needs to grow, love, play and to be treated as an individual and not as an object are among the basic requirements for the child to grow and develop well. Attention, care, protection, empathy, understanding and social education for the roles and responsibilities would be what the child need for healthy development (Dean, 2016).

There are some problems which preschool children may suffer from such as respiratory problems as colds, cough, fever and asthma. Communicable disease such as gastroenteritis which are common health issues for children in these years due to lack of a well-balanced diet and changeable of appetites and activity levels during the day. Other problems such as vomiting, diarrhea, dehydration and infections as streptococcal infections for ex; tonsillitis and some food-borne infections for ex; ascariases (Bouchard et al., 2011).

Also there are other behavioral problems such as Encopresis (holding bowel movements a problem that children age four or older can develop due to chronic (long-term) constipation, Enuresis it defined as repeated involuntary voiding of urine after control should be established, Stuttering some time referred to as stammering or diffluent speech, is a speech disorder. This is different than normal repetition of words that children may do when learning to speak; hard to recognize, Thumb Sucking is one of the most common habits of children, and Biting is an unacceptable behavior that needs to

be stopped at an early age to prevent further occurrences (Dos Santos et al., 2017).

Community health nurses have a long-standing practice of promoting physical, mental, emotional and social health and in preventing disease and injury across the life span. In addition to providing home visits and clinics to young families. (Bidzan-Bluma and Lipowska, 2018).

CHNs use a variety of strategies such as health education, group skill-building programs, one-to-one interventions and broader population-based strategies such as health communication, social marketing and community development. The health promoting practice of CHNs in a variety of settings; Building healthy public policy, Creating supportive environments, Strengthening community action, Developing personal skills and Reorienting health services (Barnett et al., 2014).

#### **Significance of the study:**

The Egyptian preschool children represented 14.1% of whole population according to census 2006. Giving care to understanding what happens in this period of a child's life in Egypt will help in better planning for the future needs. Statistics about urban and rural populations is about half of the worlds present lives in urban areas and this is expected to increase to 60% by 2030 with more than 5 billion urban residents throughout the world in 2000.388 cities throughout the world had populations greater than million (Hassan, 2013).

#### **Aim of the study**

**Is to assess health needs and problems among preschool children in rural areas through:**

1. Assessing mother's knowledge regarding health needs for preschool child in rural areas.
2. Assessing mother's reported practice regarding health needs & problems for their preschool children in rural areas.

3-Assessing growth and development for preschool children through anthropometric measurements

4-Assessing preschool child's health needs in rural areas.

5-Assessing preschool child's health problems in rural area.

#### **Research questions:**

**Q1:** Is there relation between socio-demographic characteristics and mother's knowledge regarding health needs & problems among their preschool children?

**Q2:** Is there a relation between mother's practice and health needs & problems for their preschool children?

**Q3:** Is there a relation between mother's practice and health needs & problems for their preschool children?

**Q4:** Is there a relation between health needs & health problems for preschool children?

#### **Participants and Methods**

##### **Research Design:**

A descriptive analytical design was conducted for this study.

##### **Setting:**

The present study was conducted at Tanta Basyoun center Gharbiya Government, Egypt including (38) governmental Nursery School. Three government Al Nursery Schools were selected randomly. Kafr Elasker nursery school, Elsayranursery school., Altahreer nursery school.

##### **Sampling:**

A multi stage sampling was used in this study to get study participants.

**Stage 1:** involved selection of three governmental nursery school from a list 38 governmental nursery school within Basyoun center namely (Kafr Elasker, Elsayra and Altahreer nursery school)

because this is the most famous or public for mothers.

**Stage II:** involved selection children and their mother's from each

Selected governmental nursery school by simple random sampling

Method which was used to select the children and their mothers that were involved in the study.

**Stage III:** purposive sampling procedure will be used to obtain the sample size according to the following inclusion criteria:-

- The age of children 3:5 years old.
- Free from any genetic disease or disabilities
- The final sample size is (200) participants

#### **Data collection Tools:**

**The first Tool: structured Interviewing Questionnaire;** it was developed by the investigator in simple Arabic language to be simple for understanding of the studied sample and after reviewing the related literature, it was divided in to four parts:

**First part:** to assess demographic status and consisted of 13 Questions such as age, gender, Childs birth order, age of mother, level of education, occupation, marital status, family size, place of residence and family income.

##### **Second part:**

It was concerned with current health status for preschool child, which include gastrointestinal problems (4 items), respiratory problems (4 items), social problems (4 items), Behavioral problems (4 items), intellectual problems (4 items) and psychological problems (13 item),

❖ **Scoring system of child's health status:** the mothers responses to question: it

was ranged from one point to present problems answer and zero to no present problems answer. Child's health problems (32 items), the total score was 33 degree equal to (100%) and according to mother's answers, their child's health problems were categorized as present problems ( $\geq 50\%$ ) (From 17-33 points) and no present problems ( $< 50\%$ ) from (0-16 points). (Churchill, 2015).

**Third part:** It was concerned with knowledge of mothers regarding preschool factors which affect growth, development health needs and problems of preschool child which consisted of 27 items.

❖ **Scoring system of mother's knowledge:** - the correct answer was scored one, and incorrect answer was scored zero. These scores were summed up and converted into percent score which categorized in to: (score from  $< 50\%$ ) referred to unsatisfactory knowledge, (score from  $\geq 50\%$ ) referred to satisfactory knowledge.

**Fourth part:** Assess mother's reporting practice regarding achievement of health needs toward their preschool children which include: physical needs (24 items), psychological needs (9 items), social needs (9 items), cognitive needs (9 items) and security & safety needs (16 items).

**Scoring system for mother's reported practices for achievement of needs:** - Each item has been scored as 2 for always, 1 for some times and zero for never. The scores of the all items were summed up. These the total scores of (67) items were converted in to a percent score; accordingly they were categorized as follows: - Adequate reported practices (34-67) 50% and more. - Non adequate reported practices (0-33) less than 50%.

**The second tool:** Anthropometric Measurements: Body mass index (Johnson and Fisher, 2018)

**Third tool: observational checklist to assess Development of preschool child and growth through** assess physical, social, emotional, cognitive, language and seek advice (Johnson and Fisher, 2018).

❖ **Scoring system of preschool child's development:** - It include (63 items) 1 scored to normal development and zero scored abnormal development. All items summed up and categorized to two category normal  $\Rightarrow 50\%$  (31:63), Abnormal  $= < 50\%$  (0:31).

#### **Pilot study:**

The aim of pilot study was to test the practicability of data collection tools to estimate needs to fill each tool.

A Pilot study was conducted on 10% (20) child of the total number of children they were chosen randomly from 38 Governmental Nursery schools in order to test the applicability of constructed tools of the clarity of the included questions, as well as to estimate the average time needed to complete all questions.

#### **Fieldwork:**

To carry out the study, an approval was obtained from the director of the intended study setting. A letter was issued to them from the Faculty of Nursing, Ain-Shams University, explaining the aim of the study in order to obtain their permission and cooperation. Data collection was done in 3 days per week, collected data from mothers by observed their children and assess growth & development of them through anthropometric measurements. Timing of data collection three days per week for three months from March to June, from 9 am to 1 pm (3-6 mother per day). Each mother took 35-45 minutes nearly to complete the interview and 10-15 minutes nearly by helping nurses who took anthropometric measurements for preschool child. The investigator read questions and wait until the illiterate mother to complete the questionnaire while literate mother who took questionnaire and filled it by her self.

### Administrative Design:

Approval was obtained through an issued letter from the Dean of Faculty of Nursing, Ain Shams University to directors of the previously mentioned settings. The investigator explained the purpose and the methods of the data collection.

### Ethical considerations:

The research approval was obtained from the faculty ethical committee before starting the study. Written approval was obtained from the organizations before inclusion in the study; a clear and simple explanation was given according to their level of understanding, physical and mental readiness. They secured that all the gathered data was confidential and used for research purpose only, the children mother's informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time.

### Statistical Design:

Statistical presentation and analysis of the present study was conducted, using the mean, standard Deviation, Linear Correlation Coefficient and chi-square, Quantitative data were expressed as mean  $\pm$  standard deviation (SD). Qualitative data were expressed as frequency and percentage.

Tests by (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.).

### Results:

**Table (1):** shows that 59.5% of preschool children were male, the mean age of children was  $4.2 \pm 0.81$ , while 33% were the first of arrange among his sibling.

**Table (2):** shows that the mean age of mother was  $30.52 \pm 5.17$ , 74.5% of mother didn't have job 37.5% were aged of mother 25- <30 years, 56 % were Average education level, 90% of mother live in rural area, 57% of mother had nucleus family,

54.5% of the study had Sufficient income, the mean number of family members was  $4.83 \pm 1.31$ , the mean number of rooms were  $2.63 \pm 0.69$  and the crowding index 51%crowded and 49%over crowded.

**Table (3):** shows that more than half of mothers 56% agree that preschool age begin from 3-5 years, about one third 29% agree that dietary factors such as obesity which affect the growth of preschool children, 23% of mothers agree that safety and security are the basic needs to the child at this stage, 35% of mothers agree that mental development is the development of the child at this stage, 18% of mothers said that health problems are the most complain of the child at this stage and 22% of them didn't know which problems that the child complain of at this stage.

**Table (4):** shows positive statistically significant correlation between Total Knowledge and Total practice when  $r=0.327$  and p-value was  $<0.001^{**}$ .

**Table (5):** shows statistically highly significant negative correlation between Total mother's practice and Total health problems of children when  $r=-0.384$  and p-value was  $<0.001^{**}$

**Table (6):** show significant statistically positive correlation between total health needs and total health problems among preschool child  $r=0.311$  p value $<0.05$ .

**Table (7):** shows highly statistically significant relation between Total Knowledge with Age of mother, Mother education level, mother's job and Residence when p-value was  $<0.001^{**}$

**Figure (1):** this figure show that 68%of preschool children hadn't any problems and 32%of them had problems such as digestive, behavioral, respiratory, social and cognitive problems.

**Figure (2):** This figure shows that 96, 5% of preschool children had normal growth and development, 3,5% had abnormal growth and development.

**Figure (3):** This figure shows that 59% of mothers practice toward their preschool child's needs were achieved and 41% of mother's reported practices were none achieved.

**Table (1):** Distribution of preschool children according to their demographic data (n=200).

Items	N	%
<b>Age</b>		
3- <4 years	64	32
4-5 years	136	68
Mean±SD		4.2±0.81
<b>sex</b>		
Male	119	59.5
female	81	40.5
<b>Arrange the child among his brothers</b>		
1 <sup>st</sup>	66	33
2 <sup>nd</sup>	48	24
3 <sup>rd</sup>	62	31
4 <sup>th</sup>	13	6.5
>=5 <sup>th</sup>	11	5.5

**Table (2):** Distribution of mothers according to their demographic data (n=200).

Items	N	%
<b>Age of mother</b>		
20- <25 years	17	8.5
25- <30 years	75	37.5
30- <35 years	59	29.5
>=35	49	24.5
Mean±SD		30.52±5.17
<b>Educational level</b>		
No read & write	18	9
Read and write	41	20.5
Average	112	56
University	29	14.5
<b>Mother's job</b>		
Working	51	25.5
Do not work	149	74.5
<b>Residence</b>		
Urban	20	10
Rural	180	90
<b>Family income</b>		
Enough	109	54.5
Not enough	91	45.5
<b>Type of family</b>		
nucleus family	114	57
Parent family	7	3.5
extended family	79	39.5
<b>Number of family members</b>		
2	1	0.5
3	15	7.5
4	73	36.5
5	75	37.5
6	20	10
7	5	2.5
8	4	2
9	5	2.5
10	2	1
Mean±SD		4.83±1.31

Contin; (Table2): Distribution of mothers according to their demographic data (n=200).

Items	N	%
<b>Number of rooms</b>		
1	6	1
2	74	2
3	112	3
4	6	4
6	2	6
Mean±SD	2.63±0.69	
<b>Crowding index</b>		
<2 crowded	102	51
>2 over crowded	98	49

**Table (3):** Distribution of mothers according to their knowledge regarding their preschool children's health needs and problems. (n=200).

Items	N	%
<b>Age of pre-school</b>		
One day to three years	24	12
3 years to 5 years	112	56
5 to 7 years	32	16
I do not know	32	16
<b>Factors affect the growth of pre-school children</b>		
Heredity factors	16	8
Dietary factors such as obesity	58	29
Parents relationship with children at this stage	40	20
Social level	10	5
Health factors	22	11
Environmental risks	18	9
I do not know	36	18
<b>The basic needs at this stage</b>		
Physical needs	16	8
Psychological needs	36	18
Social needs	28	14
Cognitive needs	24	12
Safety and security needs	46	23
All of the above	34	17
I do not know	16	8
<b>The development of the child at this stage</b>		
Mental development	70	35
Emotional development	22	11
Cognitive development	34	17
Social development	12	6
All of the above	40	20
I do not know	22	11
<b>The problems that the child is experiencing at this stage</b>		
Physical problems	4	2
Medical Health problems	36	18
social problems	30	15
Psychological problems	10	5
Cognitive problems	18	9
Behavioral problems	32	16
All of the above	26	13
I do not know	44	22
Not mutual exclusive		

**Table (4):** Correlation between mother's total knowledge and their total practice related to needs for preschool stage (n=200) .

Total mother's practices	Total mother's Knowledge	
	r	P-value
	0.327	<0.001**

**Table (5):** Correlation between mother's Total practice and Total health problems related to their preschool children (n=200).

Total health problems	Total practice	
	r	P-value
	-0.384	<0.001**

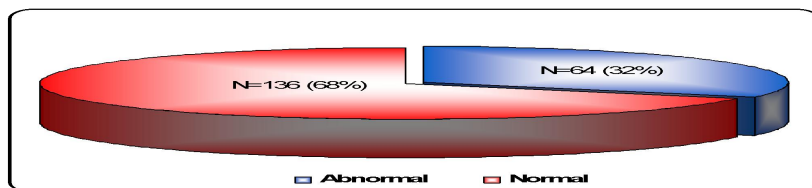
**Table (6):** Correlation between preschool child's health needs and their health problems. (n=200).

Item	Health problems	
	r	P-value
Health needs	0.311	<0.05**

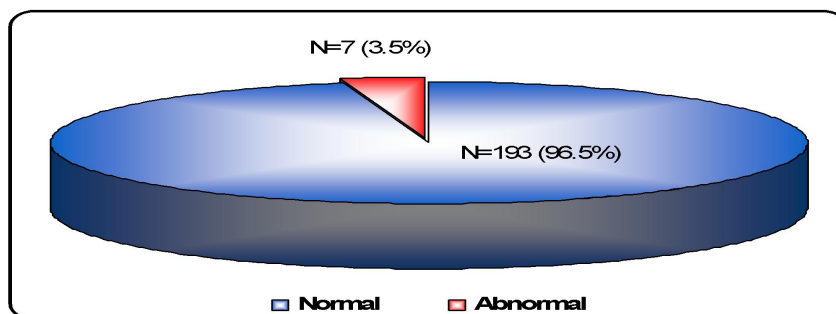
**Table (7):** Relation between Total Knowledge with mother's demographic data (n=200).

	Total Knowledge				Chi-square	
	Satisfactory		Unsatisfactory		$\chi^2$	P-value
	N	%	N	%		
<b>Age of mother</b>	N=122		N=78			
20- <25	4	23.5	13	76.5	21.328	<0.001**
25- <30	43	57.3	32	42.7		
30- <35	34	57.6	25	42.4		
>=35 or more	41	<b>83.7</b>	8	16.3		
<b>Mother education level</b>					15.541	<0.001**
Illiteracy	9	50.0	9	50.0		
Read and write	21	51.2	20	48.8		
Average	65	58.0	47	42.0		
University	27	<b>93.1</b>	2	6.9		
<b>mother's job</b>					18.382	<0.001**
Working	44	<b>86.3</b>	7	13.7		
do not work	78	52.3	71	47.7		
<b>Residence</b>					7.856	0.005*
Urban	18	<b>90.0</b>	2	10.0		
rural	104	57.8	76	42.2		
<b>family income</b>					1.709	0.191
Enough	62	56.9	47	43.1		
Not enough	60	65.9	31	34.1		
<b>Type of family</b>					1.267	0.531
family nucleus	72	63.2	42	36.8		
single family	3	42.9	4	57.1		
extended family	47	59.5	32	40.5		
<b>Crowding index</b>					0.266	0.606
<2	64	62.7	38	37.3		
>2	58	59.2	40	40.8		

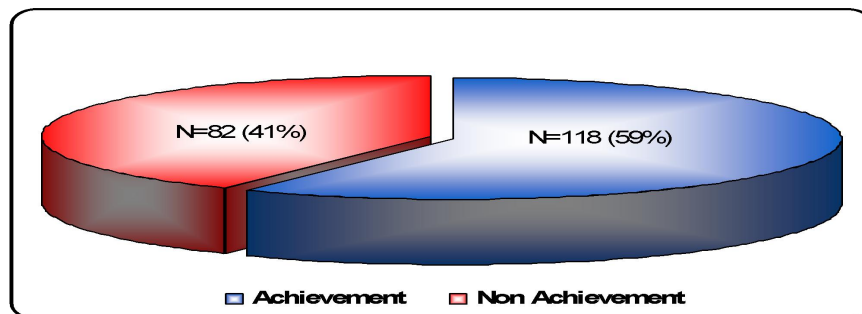




**Figure (1):** Distribution of preschool children according to their total health problems (n=200).



**Figure (2):** Percentage distribution of preschool children according to their total growth and development (n=200).



**Figure (3):** this figure show that 59% of mothers practice toward their preschool child's needs were achieved and 41% of mother's reported practices were none achieved.

## Discussion

Pre-school period covers the ages between 3 and 5. Monitoring the growth and development of the child in this period is one of the essentials of pediatric practice because growth and development can be affected from every case that disturbs mental and physical wellbeing of the child. On the other hand, a normal period of development and growth indicates at least that there has

been no serious health problem affecting the child over the last decades, there have been several studies in literature to focus on the children in pre-school period (*Kaya and Eminem, 2016*).

**The current study findings were that** the mean age of children was  $4.2 \pm 0.81$ , more than half of them were males. The child order among his sibling was first child

for more than half of the studied sample (Table1).

These findings disagreed with *Augustine (2015)*, who studied the Common illness and preschooler's Experiences in Child Care at University of South Carolina, and stated that 45% were first-born.

The current study revealed that more than three quarter of mother agree that the social environment in which a child lives affect his morals and behavior, the majority of mothers agree that the nature of the relationship between the father and mother, whether love or hate affect the behavior of the child and the formation of his personality and three quarter of them agree that the social situation in which the child lives, whether poverty or wealth, for example, affect the formation of the personality of the child.

The current study revealed that more than half of mothers were satisfactory in total knowledge regarding preschool health needs.

**These results were agree with Benson et al., (2018)** who studied Study of the Determinants of Chronic Malnutrition in Northern Nigeria: Quantitative Evidence from the Nigeria Demographic and Health Surveys, and found that mother's nutrition-related knowledge can play on child nutrition outcomes. Mother's knowledge of food choices, feeding, and health care seeking are vital for producing good nutrition outcomes for young children. The present level of mother's educational attainment in rural Nigeria is not sufficient to reinforce knowledge in producing better nutrition outcomes for children. In such populations with limited access to formal education, mother's knowledge of health and nutrition may substitute for education in reducing malnutrition in young children.

**Warren et al., (2014)** who studied The Role of maternal responsively in the

development of children with intellectual disabilities. University of Kansas, Lawrence, USA; and found that most of the mother had deficient knowledge on care of defective child. Many of the mothers considered their defective child as a burden and isolated in house. 15% of mothers had good knowledge, 27% moderate, and 48% of the mothers had very poor knowledge regarding care of defective child.

The current study revealed that about two third of children had problems in digestive system and cognitive problems. About one thirds of them were had respiratory tract problems and behavioral problems, more than half of them were had social problems.

These findings disagreed with *Augustine (2015)*, who studied the Common illness and preschooler's Experiences in Child Care at University of South Carolina and found that The most common child illness was respiratory infection (3.58 total reports across all time periods), followed by gastrointestinal illness (1.50 reports).

**Kariuki et al. (2017)** who studied Burden, risk factors, and comorbidities of behavioral and emotional problems in Kenyan children In what appears to be the first epidemiological survey in Africa addressing preschool children's behavior, caregivers in rural Kenya1 and reported high rates of preschool children 13% with behavioral and emotional problems; 10% had externalizing problems and 22% had internalizing problems, these results were agree with the results of this research.

The current study revealed that more than half of mother's reported practice was always as the following: More than half of mother's practice was always in Physical health needs),two third of mother's practice was Always in Total practice, more than half of mothers practice was always in cognitive needs, two third of mothers practice was

always in security and safety needs, more than half of mothers practice was always in psychological needs and two third of mothers practice was always in social needs.

**Robinson., (2017)** who studied Differences in health care, family, and community factors associated with mental, behavioral, and developmental disorders among children aged 2–8 years in rural and urban areas in the United States, and the study shows that poverty in rural setting affects child cognitive performance more than urban poverty. These findings highlight the importance of using methodological designs that do not confound the effects of context and SES, though they might be correlated. Poverty in rural and urban contexts stands for qualitatively and quantifiable different forms of scarceness. These differences showed not only that rural poverty is more extreme than urban poverty, but also that it is more risky for child cognitive development. As poverty is more extreme in rural settings, the effects of context (rural/urban) and socioeconomic status (SES) are often confounded. In this paper we isolated these effects and showed that living in a non-urban context has a negative impact on children's cognitive performance that is independent of SES and more pronounced than that of low SES. Poverty in rural and urban contexts imply qualitatively and quantifiable different forms of scarceness. Factors including fewer months of past preschool attendance as well as a lower completed level of education of fathers, typical of rural contexts, explained that, for the same level of SES, children in rural settings performed consistently worse than children in urban settings. These results have implications for the design of public policy and intervention programs that aim to address the needs of specific living contexts and socioeconomic groups.

**These findings disagreed with Hassan F., (2013).** Professor of Public Health & Preventive Medicine, Community Medicine Department, Faculty of Medicine,

Suez Canal University Medical Journal who studied Preschool Child Development in Egypt and The situation of the Egyptian pre-school children and found that Children in rural areas and Upper Egypt suffer more and need more attention. Rearing styles among the Egyptian families are those that not encouraging creative abilities and independence among the preschoolers. Poverty and illiteracy, especially among women will hinder the progress expected in the future with the advance knowledge and technology. These negative factors will be more prevalent in rural and upper Egypt. There is a need to conduct regular surveys on issues related to Egyptian preschool child development and this is agree with the current study.

The current study revealed that more than three quarter of study sample had normal growth and development as following: More than three quarter of children had normal weight, more than three quarter had normal length, the majority of studied children had normal head circumference, Chest circumference, temperature, pulse and Respiratory rate. The majority of studied children were normal in their Physical, Seek advice, Social, Emotional and Cognitive development. Also the majority of studied of children were normal in their total growth and development. The growth of an individual is a result of a complication interaction between a number of different external and internal factors. Difference in standard living stated as the factor, which most clearly cause differences in height and weight among groups of children or young.

**These findings disagreed with Hassan F., (2013)** who studied Preschool Child Development in Suez Canal, Egypt and The situation of the Egyptian pre-school children and found that Malnutrition among preschool children is still prevalent (29% were stunted, 6% underweight; and 7% were wasted). Iron deficiency anemia is also

prevalent among children and has implications on the normal development of the Egyptian preschoolers. The prevalence of low birth weight infants i.e. < 2.5 kg was 7% compared to 15% in Sudan this indicated the health of the mothers. The Egyptian national figures on low birth weight (<2.5 kg) were dated 1979 and 1983, at 14 and 7 percent of all births

Prevalence of the stunted children aged 2-6 years was found in New Valley (56.8%) and the lowest in Cairo (24.8%). The prevalence of the underweight was 11.2%. Most recent estimates show that over 26% of children under the age of five are moderately or severely stunted. On nutritional status of 150 preschool children aged 2-5 years in Alexandria showed that 24% and 6.7% suffered from mild and moderate protein energy malnutrition respectively. Socioeconomic factors as well as the eating behavior of children affected the nutritional status. A prevalence of 22% of Protein Energy Malnutrition (PEM) among the preschool children was reported.

According to the current study there is a positive statistically significant correlation between Total Knowledge and Total practice when  $r=0.327$  and  $p$ -value was  $<0.001^{**}$ , and negative statistically significant correlation between Total practice and Total health problems when  $r=-0.384$  and  $p$ -value was  $<0.001^{**}$  and there is significant statistically correlation between total health needs and total health problems among preschool child  $r=0.311$   $p$  value  $<0.05$ .

According to **Dommler et al. (2017)** who studied maternal nutrition knowledge and child nutritional outcomes in urban Kenya; and found that there is associations between mother's nutrition knowledge and underweight, which measures both stunting and wasting. Mothers with above primary level education can significantly increase HAZ scores, (stunting reduction) in children and WHZ scores (wasting reduction) in children.

**Amare et al (2018)** who studied the Determinants of Chronic Malnutrition in Northern Nigeria: Quantitative Evidence from the Nigeria Demographic and Health Surveys, and found that in a setting where illiteracy rate is higher, low level of parental education, typically below junior secondary, has no significant effect on child undernutrition. Given the present level of mother's formal education in the studied population, further gains are unlikely to reinforce mother's nutrition knowledge for the purposes of reducing undernutrition.

Furthermore, having more children is positively associated with stunting rate in children. More children, particularly under five children, per mother tend to increase intra-household competition for childcare resources such that a child is denied adequate nutritional care, adult education through behavioral change communications would be an effective means for reaching out to poor and less educated Nigerian women.

**Another study by Alkhtib A et al., (2018)** who studied Knowledge, Attitudes, and Practices of Mothers of Preschool Children About Oral Health in Qatar: A Cross-Sectional Survey Oral Health Division Operations, Primary Health Care Corporation, Doha 26555, Qatar; and found that There is an association between oral health knowledge, age, and the education level of mothers, which are directly linked to the status of their children's oral health this study findings focused on mothers' knowledge, attitudes, and practices toward the oral health of preschool children in Qatar, The literacy rate among Qatari women is 97.6%. Although the majority of mothers had sound knowledge about oral health in children, low motivation, low enthusiasm, and the lack of practical training could be a result of a poor implementation of knowledge.

This study were agree with the current study while there is a highly statistically significant relation between Total Knowledge

with Age of mother, Mother education level, mother's job and Residence when p-value was  $<0.001^{**}$ , highly statistically significant relation between Total health problems with Age of mother, Mother education level, family income, mother's job and Residence when p-value was  $<0.001^{**}$ , highly statistically significant relation between Total practice with Age of mother, Mother education level and mother's job when p-value was  $<0.001^{**}$ .

**Moeschler et al., (2014)** who studied Comprehensive evaluation of the child with intellectual disability or global developmental delays and found that there is association between levels of knowledge and selected socio demographic variables Level of knowledge was higher among mothers with high occupational status than those with lower level of jobs and the association was found to be statistically significant with p value  $<0.05$ . Mothers with higher educational status had high level of knowledge and it was found to be statistically significant with P value  $<0.05$ . mothers with high socio economic status had high level knowledge than low socio economic status parents The association between socioeconomic status and level of knowledge was found to be statistically significant with p value  $<0.05$ . Mothers in nuclear family had moderate level of knowledge compared to those in joint families who had knowledge but this association was not statistically significant. And this is agree with the current study.

### **Conclusion**

**On light of the current study results, it can be concluded that,** more than half of mothers were had satisfactory total knowledge toward preschool stage. Moreover, there was positive correlation between total knowledge and total reported practice of mothers toward their preschool children health needs. On the other hand there was negative statistically significant correlation between total practices and total health problems. There was a highly statistically significant relation between Total

Knowledge with Age of mother, Mother education level, mother's job and Residence, statistically significant relation between Total health problems with Age of mother, Mother education level, family income, mother's job and Residence.

There was positive statistical significant correlation between total health problems and needs of preschool children.

### **Recommendations**

**The following recommendations were inferred from the study:**

- Counseling programs for mothers to improve their knowledge and practice toward achievement of health needs for their preschool children
- -Provide proper health education for mothers to improve their practices toward resolving any problem may face their preschool children.
- -Particular effort should therefore be made to ensure this knowledge is rightly acquired. Other means of knowledge acquisition for mothers who do not have a formal education or cannot complete education above primary school should be employed. More importantly, programs should identify which child care practices should be encouraged to enhance maternal and child nutrition and health; promoting such could mitigate the negative association of mother's lack of education with children's health. Finally, adult education through behavioral change communications would be an effective means for reaching out to poor and less educated Nigerian women.
- Follow up frequently to early detection of health problems and unachieved health needs of preschool children in all nursery school all over the government.

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