

Effect of Health Promotion Guidelines on Knowledge and Practice for Caregivers at Nursery schools

Sanaa Adly Mina¹, Ebtisam Mohamed El Sayed², Sabah Mohamed Sharshor³

¹ Clinical instructor in Technical Institute of Health

² Professor of Pediatric Nursing Faculty of Nursing Tanta University

³ Assistance Professor of Pediatric Nursing Faculty of Nursing Tanta University

Abstract

Preschool period is a crucial stage of life in terms of a child's physical, intellectual, emotional, and social development, health promotion knowledge of pre-school caregivers is an important factor that affects children's health. Nursery school is essentially an important place for preschool children to learn healthy eating, adequate hydration, exercise, proper hygiene, teeth care, and controlling emotions with their classmates. Caregivers as educators should make preschool children aware of the dangers of unhealthy behaviors which cause fall, burn, bleeding, and airway obstruction. By teaching children how to stay healthy and safe, caregivers prepare children for these times by teaching them; to deal with accidents and an emergency. **Aimed** of the present study was to determine the effect of health promotion guidelines on knowledge and practice of caregivers at nursery schools. Convenience sample caregivers contacted by children from 3-6years working at 20 nurseries. The total number of sample was 60 caregivers. Tools of data collection included A structured interview questionnaire & observational checklist and health promotion guidelines to assess Caregivers' knowledge and practice about health promotion of preschool children. **Results:** There were statistically significant differences in relation to knowledge and practice scores of the caregivers throughout the three phases of the guidelines intervention. **Conclusion,** it was concluded that guidelines effect on caregivers' knowledge and practice regarding health promotion of preschool children. **Recommendation** of this study was to provision of health guidelines for caregivers especially those new about health promotion and the needs of preschool children.

Key wards: Caregivers, Health Promotion, Knowledge, Practice Nursery schools

Introduction

Preschool period is a crucial stage of life in terms of a child's physical, intellectual, emotional, and social development. Growth of mental and physical abilities progress at an amazing rate and a very high proportion of learning take place. Preschool children particularly need high-quality of hygienic care and learning through nursery school.^(1,2)

Children constitute a large segment of population .Number of children in Egypt arrived at 39.2 million children (2020). According to Central Agency for Public

Mobilization and Statistics, more than 40% of the population was children & 31.9% of children were in the preschool period.⁽³⁾

Nursery school is virtually important places for preschool children to learn healthy eating, adequate hydration, exercise, proper hygiene, teeth care, and controlling emotions with their classmates. Caregivers as educators should make preschool children aware of the dangers of unhealthy behaviors which cause fall, burn, bleeding, and airway obstruction.

Teaching children how to stay healthy and safe, caregivers can prepare children for these times by teaching them to deal with accidents and an emergency. ⁽⁴⁻⁷⁾

Nursery school provides an excellent vehicle for expanding children's experiences with others it is also excellent preparation for entrance to elementary school. In nursery school, children have opportunities to learn about group cooperation; adjustment to sociocultural differences; and coping with frustration, dissatisfaction, and anger. In nursery school mastery and achievement, which allow children to gain increased feelings of success, and self-confidence, whether structured learning is imposed is less important than the social climate, type of guidance, and attitude toward the children that is fostered by the caregivers or teachers. Caregivers should be aware of preschoolers' developmental abilities and needs, children will learn from the activity provided, as; quiet play, outdoor activity, group activities ,games and projects, creative or free play, and snack and rest periods. ⁽⁸⁻¹⁰⁾

Preschool caregivers are an individual has a very important role in regard to their job duties. Caregivers are caring for young children while teaching children various things along the way. Caregivers are the first teachers to provide instruction to the preschool children and have many different general responsibilities and specific duties in the daily guiding role and teaching children, about things related to intellectual, physical and social growth, through helping the preschool children to interact with others while learning necessary tools to get ready for school entry. Through providing a wonderful learning environment, teaching preschool

children to be creative and providing a safe and caring environment to learn and grow. ^(11, 12)

Aim of Study

Determine the effect of health promotion guidelines on knowledge and practice of caregivers at nursery schools.

Research Hypothesis

Caregivers who will receive health promotion guidelines are exhibited to be improved of total knowledge and practice means score post guidelines implementation

Subjects and Method

Research design

Quasi-experimental research design was used in this study.

Setting

The present study was conducted at 20 nurseries from the first and second district of Social Affairs at Tanta city, were selected by stratified random sample.(Ten nurseries were selected from the first district and ten from the second district).

Subjects

Convenience sampling of 60 caregivers contact by children from 3-6 years working at previously mentioned nurseries.

Tools of data collection

Two tools were used to collect the necessary data required for this study.

Tool I- Structured interview Schedule. It was developed by the researcher after review recent literatures ^(8-10, 13-16) to collect the necessary data included;

Data related to the caregiver such as: age, level of education, years of experience, marital status,

Data related to preschool age children such as: age of children and the number of children in each class.

Caregiver's knowledge about preschool age children's growth & development such as:

Definition, classification, type of physical growth (as, weight and height), physiological growth (Temperature, pulse, and respiration), types of development as (motor, cognitive, emotional, and psychosocial Development) of preschool age^(8-10, 13)

Health promotion of preschool children include; nutrition of preschool children as;(caloric, protein needs, types of food, and the number of meals/day), Personal hygiene; (hand washing, grooming, oral hygiene, and dental care), Toilet training as (normal age, importance, and problems of toilet training), Sleep pattern as (normal sleep hours, sleep problems, needs to nap), Play as (importance, type of play needed to preschool children and role of caregiver)

Preschool children problems such as; physical problems (causes, prevention, care of problems), Behavioral problems and psychological problems⁽¹³⁻¹⁶⁾

Scoring system for caregiver's knowledge

Knowledge obtained from caregivers was scored and calculated according to the answer, and their responses were evaluated using the model key answer sheet prepared by the researcher. The questionnaire sheet contained questions growth, development, and health promotion of preschool children. The caregivers respond to these questions before, immediately and after one month of the guidelines. Three levels of scoring were used: Correct and complete answer will be scored (2), Correct but incomplete answers were scored (1), and incorrect or don't know was given (0). **Total scores** were calculated as follows less than 60% were

considered poor, 60%-75% were considered fair and 75%-100% were considered good

Tool II- Observation checklist it was developed by the researcher after review recent literature to assess caregivers' practice related to - Care provided to preschool children such as

-Most common injuries of preschool-age children as; burn, fracture and bleeding

-Physical measurement as weight and height

Physiological measurement as measure temperature, pulse, and respiration

Hygienic care such as: hand washing, and oral hygiene.

-Two levels of practices scoring were used; Done scored (2) and Not done scored (1)

The total percent of caregiver's practices as follows less than 60% were considered poor, 60%-75% were considered fair and 75%-100% were considered good

Method

An official letter was sent from the Faculty of Nursing of Tanta University to the responsible authorities of nurseries which are affiliated to social affairs to take their permission to conduct this study.

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-Ethical community approval was taken to conduct study: consent was obtained from caregivers after explaining the aim of the study at any time

-Confidentiality and privacy were taken into consideration during data collection they have the right to withdraw at any time.

-The tools were developed by the researcher under supervision of the

supervisors after a through detailed review of literature. And tested for its content validity by five experts (two professors of pediatric nursing, two professors of community nursing, and one professors of community medicine)

-A pilot study was conducted on 10% of the studied sample (one nursery from the first district and one another from the second district) to test the applicability and clarity of the tools. Data obtained from the pilot was excluded from the sample size.

Tool I was distributing to the caregivers during the break time and returned after fillet back to the researcher.

Every caregiver was observed by the researcher during day work to assess their actual practice in providing care for preschool-age children using **Tool II**.

General objective of the guidelines

The educational guidelines aimed to improve caregiver's knowledge, practice and promote the health of preschool children

Specific objectives of the guideline were to

- Knowledge about the growth and development of preschool children.
- Knowledge health promotion of preschool children
- Knowledge about common injuries and immediate care

The study was conducted through three phases

1-Assessment phase

The guidelines were built on the assessment of caregivers' knowledge and practice that were done before the implementation of health instructions.

2-Implementation phase

The developed guideline for caregiver in nurseries school was implemented by the researcher based on assessment phase and

literature review. All study subject using interactive lectures, posters and demonstration. It was carried out eight sessions .Each educational session was taken 20-30minutes. **The first session** It was covering; an introduction about the importance of these guidelines, definition of growth and development, types of physical growth, physiological growth, types of development, growth and development in preschool age. **The second session** it was focused on health promotion of preschool children as nutrition, hygiene, toilet training, sleep pattern, and play. By the end of this session, caregivers were able to identify the health promotion of preschool children. Nutritional needs and its problems, normal sleep hours and sleep problems and its care, personal hygiene (oral care, hand washing, and its importance). Suitable time for toilet training and its importance. Play (importance of play, types of play, the role of caregiver during play.

- **The third session** it was concentrated on the physical problems of preschool children.
- **The fourth session** it was covering the following topics behavioral problems of preschool children.
- **The fifth session** was concentrated on promote safe environment to prevent injuries.
- **The sixth session** was focused on practice related to care provided to children with injuries (burn, fracture, bleeding)
- **The seventh session** was focused on physical growth such as: measurement of temperature, pulse, respiration, weight, and height.
- **The eighth session** was focused on hygienic care (oral hygiene and hand washing)

The researcher was selected different teaching activities as small discussion, and; demonstration, and presentations.

3-Evaluation phase

Evaluation of health promotion guidelines were carried out immediately after the program and one month using tool I&II.

Result

Table(1) Presents Socio-demographic characteristics of studied caregivers .It was observed that, all of them in the studied setting with ages ranging between 18-40year mean age 26.833 ± 4.865 , nearly half (43.33%) of caregivers had a diploma of education. Mean of years' experience 2.179 ± 2.047 of years' experience of them. (88.33%) didn't have training courses related to health promotion of preschool-age children

Table (2) Shows Percentage distribution of Caregiver's knowledge about growth and development, It was found that, before the guidelines, 16.67% of caregivers gave complete answers regarding the weight & height of preschool-age children and this percentage increased to 50.00% & 48.33% immediately and after one month of the guidelines respectively.

Regarding their knowledge about a child's pulse, it was found that nearly a fourth (23.33%) of caregivers gave complete answers this percentage increased to 65.00% & 61.67% immediately and after one month of the guidelines respectively.

Concerning the definition, types of development were a complete answered by 15.00% & 13.33% of caregivers before the guideline while this, percentage improved to 75.00% & 70.00% immediately and after one month of the guidelines respectively.

Table (3) Represents caregiver's knowledge about health promotion of

preschool age (Nutrition) It was shown that Nutritional needs, Basic components of nutrition, Food to be avoided, Dealing with refused food, Fluid need, and the importance of fluid for preschool children .It was found that 10.00% of caregivers gave a complete answer about the nutritional of preschool children before the guidelines while two- third

(68.33% & 61.67%) respectively immediately and post one month of guidelines

Regarding to Fluids' need, it was found that 10, 00% of the caregivers gave complete answers compared to 70.00% and 66.67% respectively immediately and after one month of guidelines implemented

Table (4) Shows caregiver's knowledge about personal hygiene of preschool children, It was clear that, 41.67% of the caregivers gave complete answers about hand washing before the guidelines, while most of them improved to (83.33%) & (81.67%) immediately and after one month of guidelines respectively.

Oral problems of preschool children it was found that only (8.33%) of caregivers gave complete answers before the guidelines, while the percentage increased to 60.00% and 51.67% immediately, and after one month of guidelines respectively

Child grooming found that 21.67% of caregivers gave complete answers before the guidelines, while two-third (65.00%) of them immediately and after one month of the guidelines implementation. Knowledge related to toilet training of children Bladder control time, it was found that 10.00% of caregivers gave complete answers before the guidelines, this percent become 53.33% & 51.67% immediately and after one month of the guidelines implemented. It was clear that, 25.00% of

caregivers gave complete answers before the guidelines about control time, this percent improved to 61.67% & 60.00% immediate, and after one month of guidelines respectively

Table (5) Illustrates caregiver's knowledge about sleep patterns and play of preschool-age children .it was clear that, before the guidelines only 11.67% of the caregivers gave complete answers about the required sleep hours for preschool children compared to 63.33% & 61.67% immediate and after one month of guidelines respectively.

Related to the Importance of play for preschool Children one quarter (25.00%) of caregivers know the importance of play compared to 71.67% & 70.00% immediately and after one month of guidelines implemented respectively.

Table (6) shows Total scores of Caregiver's Practices related to preschool children pre, Immediate, and post-one month of the guideline of health promotion was found that, no one caregiver had a good score before guidelines nearly (75.00% & 71.67%) had good scores immediate and after one month of guidelines respectively. Height also found that 6.67% of caregivers had good scores before the guidelines while 61.67% & 60.00% immediately and after one month respectively. There was a statistical difference in caregivers' practice this difference was ($<0.001^*$)

Table (7) illustrates Total scores of Care giver's Practices related to the measurement of axillary's temperature it was shown that only 3.33% had good scores before the guidelines 68.33% immediate and after one month of guidelines

There was statistically significant difference in caregivers' practice through the study period in relation to axillary's temperature where $p<0.001^*$

Table (8) Illustrates Total scores of Care giver's practices related to Hygienic care for preschool children. Hand washing shows that no one of the caregivers had good scores before the guidelines while a majority of them (91.67%& 90.00%) immediately and after one month respectively

Oral hygiene found only 10.00% of caregivers had good scores while three fourth (78.33%& 75.00%) of them immediately & after one month respectively.

There was a statistically significant difference in caregivers' practice through the study period in relation to items (hand washing & oral hygiene) where $p<0.001^*$

Table (9) illustrates Relation between Mean scores of total Caregivers' knowledge, practice, and biosocial data it was observed that there was a significant relation between the educational level and their total knowledge & practices score before the guidelines and after immediate and one month of guidelines ($p<0.001^*$). There was a significant relation between had training courses and their total knowledge & practice scores before ($p<0.001^*$) The same table shows that there was a significant relation between their marital state and their total knowledge & practices scores before the guidelines and after immediately and one month of guidelines ($p<0.001^*$)

Table (10) Correlations between total knowledge scores of caregivers, total practices scores caregivers and their characteristics revealed that there was significant relation throughout the three

phases of the study between caregivers' total knowledge, practice, and their age ($p < 0.001^*$) Also, there was a significant relation between years of experience and their total knowledge & practices scores before the guidelines and after immediately and one month of guidelines ($p < 0.001^*$)

Table (1) Percent distribution of studied caregivers about sociodemographic characteristics (n=60)

Sociodemographic Characteristics	No	%
Age /years	18-40	
- Range	26.833±4.865	
- Mean ±SD		
Educational level		
- High Educational	34	56.67
- Diploma	26	43.33
Years of experience	0.25-10	
- Range	2.179±2.047	
- Mean ±SD		
Training courses		
- Yes	7	11.67
- No	53	88.33

Table (2) Percent distribution of Caregiver's knowledge about growth and development (n=60)

caregivers Knowledge about	Pre						Immediate						Post						Chi-Square	
	Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		X ²	P-value
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				
1-Physical growth																				
-Definition	18	30.00	30	50	12	20.00	48	80.00	10	16.67	2	3.33	45	75.00	12	20.00	3	5.00	39.463	<0.001*
-Types	17	28.33	30	50	13	21.67	47	78.33	10	6.67	3	5.00	44	73.33	12	20.00	4	6.67	38.267	<0.001*
-Weight	10	16.67	12	20	38	63.33	30	50.00	19	31.67	11	18.33	26	43.33	23	38.33	11	18.33	37.926	<0.001*
-Height	10	16.76	6	10	44	73.33	29	48.33	17	28.33	14	23.33	30	50.00	15	25.00	15	25.00	40.328	<0.001*
2-Physiological growth(vital signs)																				
- temperature	26	43.33	2	3.33	32	53.33	46	76.67	7	11.67	7	11.67	45	75.00	8	13.33	7	11.67	37.334	<0.001*
-Pulse	14	23.33	1	1.67	45	75.00	39	65.00	9	15.00	12	20.00	37	61.67	9	15.00	14	23.33	48.533	<0.001*
3-Development																				
-Definition	9	15.00	36	60.0	15	25.00	45	75.00	12	20.00	3	5.00	43	71.67	11	18.33	6	10.00	55.442	<0.001*
-Types	8	13.33	36	60.0	16	26.67	42	70.00	16	26.67	2	3.33	38	63.33	20	33.33	2	3.33	52.479	<0.001*
4-Factors affect growth and development	10	16.67	29	48.33	21	35.00	38	63.33	20	33.33	2	3.33	34	56.67	22	36.67	4	6.67	42.890	<0.001*

Table (3) Percent distribution of Caregiver's Knowledge about health promotion of preschool children regarding Nutrition (n=60).

Children Health promotion	Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		X ²	P-value
	No	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1-Nutritional needs	6	10.00	32	53.33	22	36.67	41	68.33	17	28.33	2	3.33	37	61.67	19	31.67	4	6.67	58.067	<0.001*
Basic components of nutrition	24	40.00	27	45.00	9	15.00	46	76.67	12	20.00	2	3.33	47	78.33	11	18.33	2	3.33	25.845	<0.001*
Food to be avoided	8	13.33	40	66.67	12	20.00	47	78.33	12	20.00	1	1.67	45	75.00	13	21.67	2	3.33	67.032	<0.001*
Deal with refused food	11	18.33	39	65.00	10	16.67	44	73.33	15	25.00	1	1.67	40	66.67	18	30.00	2	3.33	45.965	<0.001*
2-Fluids' need	6	10.00	38	63.33	16	26.67	42	70.00	13	21.67	5	8.33	40	66.67	14	23.33	6	10.00	54.624	<0.001*
Importance of fluid	13	21.67	30	50.00	17	28.33	43	71.67	15	25.00	2	3.33	40	66.67	16	26.67	4	6.67	41.285	<0.001*

Table (4) Percent distribution of Caregiver's Knowledge about personal hygiene (n=60).

Caregivers Knowledge about hygiene	Pre						Immediate						Post						Chi-Square	
	Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		X ²	P-value
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1-Hand washing	25	41.67	28	46.67	7	11.67	50	83.33	10	16.67	0	0.00	49	81.67	11	18.33	0	0.00	36.224	<0.001*
2-Oral hygiene	47	78.33	00	00.00	13	21.67	57	95.00	00	00.00	3	5.00	58	96.67	00	00.00	2	3.33	17.606	0.001*
-Oral problems	5	8.33	38	63.33	17	28.33	36	60.00	22	36.67	2	3.33	31	51.67	26	43.33	3	5.00	47.102	<0.001*
3-Grooming	13	21.67	29	48.33	18	30.00	39	65.00	19	31.67	2	3.33	39	65.00	17	28.33	4	6.67	37.673	<0.001*
4-Nails care	51	85.00	00	00.00	9	15.00	57	95.00	00	00.00	3	5.00	56	93.33	00	00.00	4	6.67	4.253	0.119
5-Toilet training																				
-Bladder control time	6	10.00	29	48.33	25	41.67	32	53.33	24	40.00	4	6.67	31	51.67	23	38.33	6	10.00	42.714	<0.001*
-Bowel control time	15	25.00	19	31.67	26	43.33	37	61.67	17	28.33	6	10.00	36	60.00	16	26.67	8	13.33	28.992	<0.001*
-Importance of toilet training	12	20.00	35	58.33	13	21.67	40	66.67	19	31.67	1	1.67	39	65.00	20	33.33	1	1.67	28.992	<0.001*
-Toilet training problems:- Incontinence	5	8.33	26	43.33	29	48.33	36	60.00	21	35.00	3	5.00	35	58.33	21	35.00	4	6.67	61.402	<0.001*

Table (5) Percent distribution of Caregiver's knowledge about sleep pattern and play of preschool age children (n=60)

Caregiver's Knowledge about	Pre						Immediate						Post						Chi-Square	
	Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		Complete answer		Incomplete		Don't know		X ²	P-value
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				
1-Sleep pattern -Sleep hours required	7	11.67	28	46.67	25	41.67	38	63.33	17	28.33	5	8.33	37	61.67	17	28.33	6	10.0	47.777	<0.001*
-Sleep problems	9	15.00	28	46.67	23	38.33	37	61.67	21	35.00	2	3.33	34	56.67	23	38.33	3	5.00	48.880	<0.001*
2-play -presence of games in nursery	60	100.00	00	00.00	00	00.00	60	100.00	00	00.0	00	00.0	60	100.00	00	00.00	0	00.0		
-Types of games in nursery Suitable to child age	13	21.67	46	76.67	1	1.67	33	55.00	27	45.0	0	0.00	33	55.00	27	45.00	0	0.00	19.347	<0.001*
-Importance of play for preschool Children	15	25.00	36	60.00	9	15.00	43	71.67	17	28.33	0	00.0	42	70.00	17	28.33	1	1.67	40.054	<0.001*
Role of caregivers during child's play	9	15.00	38	63.33	13	21.67	42	70.00	18	30.00	0	0.00	40	66.67	18	30.00	2	3.33	52.982	<0.001*

Table (6): Total scores of Caregiver's Practice related to anthropometric measurement of preschool age children (n=60)

		Pre		Immediate		Post		Chi-Square	
		N	%	N	%	N	%	X ²	P-value
Weight	Good	0	0.00	45	75.00	43	71.67	115.620	<0.001*
	Fair	26	43.33	15	25.00	17	28.33		
	Poor	34	56.67	0	0.00	0	0.00		
Height	Good	4	6.67	37	61.67	36	60.00	102.964	<0.001*
	Fair	4	6.67	17	28.33	18	30.00		
	Poor	52	86.67	6	10.00	6	10.00		

Table (7): Total scores of Care giver's Practice related to physiological measurement (axillary's temperature) for preschool children (n=60)

Temperature	Pre		Immediate		Post		Chi-Square	
	N	%	N	%	N	%	X ²	P-value
Good	2	3.33	41	68.33	41	68.33	88.263	<0.001*
Fair	5	8.33	9	15.00	9	15.00		
Poor	53	88.33	10	16.67	10	16.67		
Total	60	100.00	60	100.00	60	100.00		

Table (8): Total scores of Caregiver's practice related to Hygienic care of preschool children (n=60)

Total scores		Pre		Immediate		Post		Chi-Square	
		N	%	N	%	N	%	X ²	P-value
1-Hand washing	Good	0	0.00	55	91.67	54	90.00	141.014	<0.001*
	Fair	41	68.33	5	8.33	6	10.00		
	Poor	19	31.67	0	0.00	0	0.00		
2-Oral hygiene	Good	6	10.00	47	78.33	45	75.00	102.760	<0.001*
	Fair	4	6.67	8	13.33	10	16.67		
	Poor	50	83.33	5	8.33	5	8.33		

Table (9) Relation between Mean scores of total Caregivers knowledge, practice and biosocial data

Total		N	Pre			Immediate			Post					
			Mean	±	SD	P-value	Mean	±	SD	P-value	Mean	±	SD	P-value
Educational level	High Educational	34	197.41	±	50.006	<0.001*	302.824	±	30.605	<0.001*	297.206	±	31.293	<0.001*
	Diploma	26	133.92	±	43.171		249.962	±	45.343		244.846	±	46.968	
Training courses	Yes	7	267.28	±	29.534	<0.001*	336.000	±	8.981	<0.001*	334.571	±	9.217	<0.001*
	No	53	157.03	±	45.597		272.509	±	43.428		266.585	±	43.582	
Marital state	Married	27	202.14	±	47.857	<0.001*	297.481	±	38.744	0.006*	292.333	±	39.213	0.006*
	Single	33	143.51	±	49.340		265.545	±	46.538		259.939	±	47.531	
Having children	Yes	21	210.14	±	49.418	<0.001*	299.714	±	39.744	0.013*	296.095	±	40.142	0.007*
	No	39	148.23	±	47.941		269.256	±	45.660		262.897	±	46.051	

Table (10) Correlations between Caregivers total knowledge scores, total practice scores and their Characteristics

	Time	Caregiver's age (Years)		Years of experience (Years)	
		R	P-value	r	P-value
Knowledge	Pre	0.614	<0.001*	0.782	<0.001*
	Immediate	0.416	0.001*	0.550	<0.001*
	Post	0.424	0.001*	0.569	<0.001*
Practice	Pre	0.435	0.001*	0.758	<0.001*
	Immediate	0.292	0.024*	0.524	<0.001*
	Post	0.303	0.018*	0.553	<0.001*
Total	Pre	0.609	<0.001*	0.809	<0.001*
	Immediate	0.406	0.001*	0.581	<0.001*
	Post	0.421	0.001*	0.612	<0.001*

Discussion

Regarding sociodemographic characteristics of studied caregivers' the current study revealed that all of the caregivers in the studied setting with ages ranged between 18-40year and nearly half of caregivers had a diploma of education, this result may affect caregivers' awareness and knowledge about the health of preschool children. These results agree with **Hongmei & etal** (2020) who mentioned that about one third of preschool teachers in their study were undergraduate & not specialized in preschool childhood and also **Sainio & etal** (2018) revealed that near half of preschool teachers/caregivers had moderate education^(17,18)

As regards caregiver's experience the current study show that most of caregivers had low years' of experience this finding may explain the cause of poor caregiver's knowledge about preschool childhood. This result agrees with **EL-Marsomy** (2019) who show that studied caregiver's in her study more caregivers had

experienced less than 5 years. Also, the current study revealed that most of the caregivers didn't have training courses related to health promotion of preschool-age children, this finding may be due to the courses not being available and caregivers hadn't time to attend courses.⁽¹⁹⁾

The results of the current study revealed that there was a lack of knowledge about; the definition of growth and development, types, gross motor development, fine motor development, and language. This finding may be due to most of them had not specialized education in this field. This finding agrees with **Brito &etal** (2022) who mentioned that there was a knowledge deficit in the definition of growth and development, types, gross motor development, fine motor development, and language⁽²⁰⁾

As regards health promotion knowledge of pre-school caregivers is an important factor that affects children's health, the current study revealed that caregivers had

lacking knowledge about the nutrition & fluid need of preschool children, this result may be due to that more caregivers hadn't any information about a healthy diet for preschool children. These results agree with **Lamanauskas** (2019) who mentioned that a deficit in kindergarten teachers' knowledge about nutrition. While this finding disagree with **Lorrian & Carolyn** (2016) who presented that preschool staff had good knowledge of healthy eating of preschool children.^(21, 22)

As regards caregivers' knowledge about personal hygiene of preschool children more of them had poor knowledge about, oral hygiene, grooming, nail care, and toilet training. This finding may be due to a lack of providing and attending specialized courses about personal hygiene. This finding agrees with **Lamanauskas** (2019) and **Amat & Zain** (2021) who mentioned that teachers/caregivers did not have enough knowledge about personal hygiene. Also, **El-Sabagh & etal** (2016) revealed that preschool children's knowledge, attitude, and practices of personal hygiene were deficient and need for more health education concerning personal hygiene^(21, 23, 24)

Regarding the caregiver's practice of hand washing the present study revealed that no one of the caregivers had a good score before the guidelines these finding agree with **Ogwezy & Solomon** (2019) who showed that only 17.3% of mothers/caregivers were doing proper hand washing. This indicates while the practice of hand washing was high among mothers/caregivers of children less than 5 years in Lagos, really were not doing it the hygienic way⁽²⁵⁾

Regarding caregivers' knowledge about hand washing the current study showed

that obvious improvement was documented in caregivers' knowledge scores post guidelines with highly significant statistical differences. This result agree with **Assefa & Kumie** (2014) cited that adequate knowledge of hand hygiene has proved to yield positive hygiene behavior is the greatest influence in teaching hand washing, also **Jamaluddine & etal** (2020) concluded that a comprehensive hand hygiene education progress included awareness of the caregivers, proper hand washing and facilities resources in instilling and sustaining good knowledge of hand hygiene^(26, 27)

As regards knowledge of caregivers on preschool oral hygiene .it was observed that most caregivers had poor knowledge pre the guidelines. This result may be due to low education and lack of experiencing in oral hygiene. On the same line, **Mani and etal** (2017) & **Ashkanani and Al-Sane** (2013) stated that caregivers had weak knowledge in relation to oral health of preschool children in contrast with **Khanal** (2015) who found that knowledge regarding oral hygiene was satisfactory knowledge the most parents/caregivers of preschool children had moderate knowledge.^(28, 29, 30)

As regards practices of caregivers on preschool oral hygiene, the present study revealed that more caregivers improved in performing all steps of brushing their teeth post the guidelines. These findings could be attributed to the oral care practice of caregivers observed and had good knowledge about oral care post the guidelines. Similarly, the study by **Haque et al.** (2016) cited that a significant improvement in oral health practices among the participants and a change to healthy practices occurred after program

was implemented. Also, the results of the study by **Abu-Elenen *et al.* (2015)** to evaluate the effect of an oral care educational program on the knowledge, practice, among children is improved after the program is implemented. Also, **Seif El-Nasr (2017)** And **Fernando (2013)** concluded that oral health intervention program has a positive impact on practices toward oral health. ⁽³¹⁻³⁴⁾

Regarding caregivers' knowledge about toilet training of children, the current study shows that most caregivers had poor knowledge about bladder control time, bowel control time, and the importance of toilet training. This finding may be a result of the majority of caregivers did not attend any courses on this topic and the courses weren't available. These results agree with **El-Khedr & Mohamed (2014)** & **Chellaswamy (2019)** who revealed that majority of the mothers/caregivers had lack knowledge about children's toilet training. Also as regarded caregiver's knowledge about toilet training of children, the current study revealed that highly significant statistical improvement in caregiver's knowledge scores after the guidelines, this finding may be due to the caregivers' willingness to improve their knowledge about the growth and development of preschool children but they couldn't take the courses because these courses are expensive. ^(35, 36)

Sleep is very important for the healthy growth and development of children. As regarding caregiver's knowledge about sleep the current study revealed that caregivers had a lack of knowledge about sleep hours needed by preschool children and sleep problems. This result may be due to more caregivers having diploma school not related to preschool childhood. This result in agreeing with **Temal & Gultekin**

(2020) & Owens (2011) who revealed the caregivers had deficient knowledge of sleep and sleep problems in children age. ^(37, 38)

Regarding caregivers' knowledge about the play of preschool children the current study showed that more caregivers had incomplete knowledge related to the importance and their role during children is play this result may be due to more caregivers had not specialized education about preschool childhood age. This result agrees with **Hongmei Hu &etal (2020) & Jayasuriya (2014)** in their study concluded that had poor knowledge regarding play of preschool children. In contrast, **Akar (2019)** who cited that in his study the caregivers had Satisfying knowledge about children's play. ^(17, 39, 40)

Conclusion

In the light of finding of present study, can conduct that there were lack of essential and proper knowledge and practice concerning health promotion of preschool children in nursery, the application of health promotion guidelines of preschool led to improve caregiver's knowledge and practice

Based on the results of the current study the following recommendations were suggested

-Ministry of health in collaboration with universities organizes mobile health teams to give awareness lectures for caregivers/teachers related to health promotion of preschool children

-Provision of health guidelines for caregivers especially new about health promotion and needs of preschool children

-Aperiodic training for health promotion, emergency procedures and first aid should be conducted.

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