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Effect of Educational Module on Improving School-Age Children and their Parent's Knowledge and Behavior Intervention about Nocturnal Enuresis

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ABSTRACT

Background: Nocturnal enuresis can affect negatively on the familial quality of life. Therefore, parents and their children should be educated about intervention to overcome these disorders. The aim: Evaluate the effect of educational module on school age children and their parent's knowledge, and behavior intervention about nocturnal enuresis. Design: The study utilized a quasi-experimental research design. Setting: Outpatient clinic affiliated to the Specialized Pediatric Hospital at Benha City. Sample: A purposive sampling technique was used consisted of sixty school age children diagnosed by nocturnal enuresis and their parent. The tool of data collection: Tool I: A structured interviewing questionnaire about characteristics of children and their parents, the pattern of enuresis and knowledge of school-age children and their parent about nocturnal enuresis.Tool II: Behaviour intervention. Results: 51.7% of the school-age children with enuresis were female and 53.3% of them were living in urban, 46.7% were taken last drink before sleep. 81.7% of school-age children have had no family history of nocturnal enuresis. 56.70% of children and 75% of parent have satisfactory knowledge post program implementation. Also, 65.0% of children and 67.0% of parent have appropriate behavior about nocturnal enuresis post program implementation. Conclusion: The educational module program was influenced positively in improving school-age children and their parent's knowledge and behavior intervention about nocturnal enuresis. Recommendations: Updates and continuous counseling program for parent and their children with nocturnal enuresis are critical to improve their knowledge, early detect and intervention to avoid the negative consequences of nocturnal enuresis.

Keyword: *Educational module, Nocturnal enuresis, School age children, Parent, behavior intervention, Knowledge.*

INTRODUCTION

Nocturnal enuresis affects 15% to 20% of 5-year-old children, 5% of 10-year-old children and defined as it is urinary incontinence occurring beyond the age of 4 years at day and 6 years at night or loss of continence after at least 3 months of dryness. Assessed the child for cognitive, understanding and physical as bladder condition are important which children can be ready for toilet training by 18 months of age and control his bladder by 4-5 years [16, 5]

A cross-sectional study included school-age children from two governorates in south of Egypt done by [13] found that younger age showed higher prevalence of nocturnal enuresis (NE) than in older children. Positive family history of NE was 84.7 %. Incontinence daytime was 16 % of cases. Children with ≥4 siblings and birth order ≥3 had more prevalent NE. Violence exposure and deep sleepers was correlated positively with occurrence of NE.

The nocturnal enuresis in children divide to two types as primary enuresis occurs in children has never established bladder control. Secondary enuresis occurs in children that relapses and begins wetting after control for a period of six months. The diagnoses of enuresis children must be at least five years old [25, 11].

The nocturnal enuresis causes still not completely understood. Several predispose factor, including small functional bladder capacity, abnormal sleep patterns, diabetes mellitus, urinary tract infections, hyperthyroidism, parasite infection, emotional stress,

convulsion disorders, sickle cell disease, and constipation were recorded in secondary enuresis [14, 32].

Behavioral intervention considers inexpensive and achieve success rate about 75%. For example, as setting an alarm to wake the child every night after a few hours of sleep, until the child learns to wake up spontaneously. Put pad with a sensor that rings a bell after wet; the bell will wake the child for going to the toilet to empty the bladder. Also conditioned waking up at the bladder feels full, once the child learned and continues to wake themselves without the alarm [27, 29] .

Enuresis leads to behavior problems because a child may feel guilt and embarrassment. A prompt management is essential; there were many approaches as psychotherapy and training in the form of reassurance to the parents and the child. Punishing child for enuresis will not solve the problem (1). Parents should be told to encourage the child in having dry nights. In fact, they should offer special pat and even reward on occasions when the child does not wet the bed. Parents must be reminding child always to use the bathroom during the night with adequate nightlights in way of bathroom for the child to find it easily. Cover the child's mattress with a plastic cover to make cleanup easier. Also, parent must restriction of too much water and drinks at bedtime and insisting on his voiding before retiring. School children should be asked to wash their own clothes and soiled bed sheets. Also, the bladder-strengthening exercises are effective. Finally Pharmacological agents tried in the condition include amitriptyline orally, the effect of medication is however, temporary one [31, 3, 2, 12, 30].

The role of the pediatric nurse in the management of children with nocturnal enuresis or behavioral problems is to assess parents' knowledge and practices and provide health education, assist the child and parent to achieve and maintain an optimal level of functioning and reduce the complications. The parents consider the key in caring the child with nocturnal enuresis should have adequate knowledge and follow good practices and manage these disorders [9].

SIGNIFICANT OF STUDY

A cross-sectional study that was conducted in Qaluobia governorate at Benha City done by (18) found that prevalence of nocturnal enuresis (NE) was 15.7 %, where primary NE was 67.1%, and the secondary NE was 32.9% with a non-significant difference ($p > 0.05$). The highest rate was during the age of 6 years and the lowest by 12 years where it declined markedly. Positive family history was 30% among the involved students.

According to (21), it is a common condition in children - occasional wet beds occur in 21% of children aged 4.5 years and 8% of nine-year-olds. Frequent bedwetting is defined as more than three wet nights a week; it affects 8% of children aged 4.5 years, 1.5% of whom will still have the problem aged 9.5 years. Behavioral modification with positive reinforcement may enhance to overcome this problem. Consistent follow-up is important to assess behavior intervention so that, educational module focus on knowledge and practices of parents have positive results in diminish nocturnal enuresis.

THE AIM OF THE STUDY

-To evaluate the effect of educational module on school age children and their parent's knowledge and behavior intervention about nocturnal enuresis.

-To compare between pre-test and post-test knowledge and behaviour intervention of school-age children and their parents related nocturnal enuresis.

-To find out the association of demographic variables of school-age children and their parent with their knowledge and behaviour intervention.

Hypothesis:

H1:- Implementing of the educational module will improve school age children and their parent's knowledge and behavior intervention for nocturnal enuresis.

H2: The post-test of knowledge and behaviour intervention scores of school-age children and their parents will be significantly higher than their pre-test knowledge scores.

H3:-There will be the significant association between knowledge and behaviour intervention scores with selected demographical variables.

Subjects and Methods:

Design: A quasi-experimental design was used.

Setting: The study was conducted in outpatient clinic at Specialized Pediatric Hospital in Benha City.

Sample: A purposive sampling technique was used

consisted of sixty school age children diagnosed by nocturnal enuresis and their parents.

Tools of data collection: Two tools were used for data collection.

First tool: A structured interviewing questionnaire was designed by the researchers after reviewing of related literature.Questions were in the form of open ended question, multiple choices. Comprised of three main parts:

- Part I: Characteristics of the school age children as (age, sex, school achievement, birth order).

- Part II: Characteristics of the parents as (age, sex, level of education, marital status, residence, socio-economic level and job).

- Part III: Questionnaire about the pattern of nocturnal enuresis as many times of enuresis, family history of nocturnal enuresis, family history of the urological problem, fluid intake during the day, time of last drink, response to treatment.

Part III: School-age children' knowledge and their parent about nocturnal enuresis, it was composed of the following items as; definition of enuresis, causes of enuresis, signs, and symptoms of enuresis, common age of nocturnal enuresis, routes of treatment, problems associated with nocturnal enuresis, and prevention from nocturnal enuresis.

Scoring system: For the questionnaire with the correct answer scoring (2), the in complete answer scored (1) and the wrong answer scored zero (0). The total scores of knowledge questions were 14 degrees those who obtained <60% were considered having the unsatisfactory knowledge, while those who obtained ≥ 60 was considered having satisfactory knowledge.

Tool two: The behaviour intervention that composed of 6 items: include thatawaking for voiding, water restriction, reward system, bladder exercise, conditioning alarm system, and diapering.

Scoring system: Each correct step of the procedure scored on the bases of "Done" scored (1), or "Not done", scored (0).The total behaviour intervention was considered appropriate practice if the percent score was ≥60%, and inappropriate practice if the percent score was <60%.

Validity and Reliability:

The tools were submitted to one expert of pediatric nursing and one expert of psychiatric nursing to test the content validity. The suggested modifications were done according to the expert's judgment. The reliability coefficients' alpha between questions was 0.86.

Administrative Design:

Taken permission for data collection through an official authorization was acquired by accommodation of official letter from Dean Faculty of Nursing, Benha University to the Director of the selected previously setting; to conduct the study after explaining and clarifying the aim of the study.

Ethical considerations:

The participant informed about the aim and benefits of the study. An oral consent was taken before starting the data collection. All data secrecy and used for research only. In addition all participation has autonomy forentitlement to pull back from study at any time.

Pilot study: A pilot study was done by 10% of the study sample,to ascertain the clarity and applicability of the study tools as well as estimation of the suitable time needed to complete the intervention. After analyzed the pilot study some modifications were made consequently and they were excluded from the study.

- Fieldwork: The intervention implemented from the beginning of January 2016 until the end of March, 2016, then follow up was done after three month of module implementation at beginning of July 2016 till the end of August 2016. The researchers prepared the previously mentioned setting to visited two days/week (Sunday and Monday) from 8.00 A.m. to 1.00 P.m. until the completed the sample size. The time needed to finishing the intervention was 60 minutes.

- Program construction: The current study carried out through, the following phases were adopted; assessment, planning, implementation, and evaluation phases. Assessment phase: the researcher encompassed interviewing the studied children and their parents to explain the aim of the study, duration, and activities and number of sessions. The researcher was divided the sample into 10 subgroups that include 6 children for each session.

• Planning phase: The researchers developed educational module combined knowledge and different behavior interventionabout nocturnal enuresis. The module was prepared in simple Arabic language to suit school age children' level and their parents understanding and given to participant to achieve its objectives. The researcher determines the number of sessions and its contents, various teaching methods and instructional media were determined accordingly.

Implementation phase:

The educational intervention program was implemented through three months, and follow up after 3 months, the module was given in four sessions; session one and two include; knowledge about the nocturnal enuresis and assess the pattern of nocturnal enuresis 30 minutes. Session three and four include awareness and training about different behavioral interventions.The researchers started session by a summary about the previous session and objectives of the new session. The researcher using simple and clear language to suitable for school age children. Teaching method was used as lectures, brainstorming, role-playing, and behaviour modelling. The teaching media as educational leaflet, coloured posters, power point, videos and pamphlet handout. The researcher success for keeping communication with the participant for answer any questions and given copy from educational module contain behaviour intervention and knowledge about nocturnal enuresis also contain star sheet of nocturnal enuresis for follow up.

• Evaluation phase: knowledge and behaviour intervention of school-age children and their parents were evaluated through post-test immediately by using the same of pre-test tools and follow up after three months following the educational module implementation.

STATISTICAL ANALYSIS

The data were analyzed by using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics (number, percentage, mean & SD) were used to describe the main variable. Association between categorical variables was tested using Chi-square test. The level of significance for all testes was performed at ($p < 0.05$).

Table (1) Demographic characteristics of the parents (n=60)

Items	No	%
Age		
≤ 25	12	20.0
26-36	40	66.7
37- ≥47	8	13.3
Mean ± SD	31.7± 5.37	
Sex		
Male	11	18.3
Female	49	81.7
Marital status		
Married	56	93.3
Divorced	4	6.7
Widowed	0	0.0
Education level		
Illiterate	1	1.7
Primary	12	20.0
Secondary	27	45.0
University	20	33.3
Residence		
Urban	32	53.3
Rural	28	46.7
Job		
Work	38	63.3
Not work	22	36.7
Socioeconomic level		
Adequate	22	36.7
Inadequate	38	63.3

Table (1): Clear that 66.7% of parents were at age of 26-36yearswith mean age at31.7 ± 5.37.Concerning to sex 81.7% of the parent was female and 93.3% of them were married. As regarding level of education 45.0 % of parents had secondary education. As regarding residence, 53.3% were living in urban. Concerning parentjob,63.3% were working and 63.3% of them had inadequate socioeconomic level.

Table (2) Demographic characteristics of the school-age children with nocturnal enuresis (n=60)

Items	No	%
Age		
6-9	19	31.7
10-12	41	68.3
Mean ± SD	9.76 ± 1.86	
Sex		
Male	29	48.3
Female	31	51.7
Birth order		
1-2	16	26.7
3-4	32	53.3
≥ 5	12	20.0
Scholastic achievement		
Succeed with excellence	13	21.7
Succeed with good	31	51.7
Pass	11	18.3
Failed	5	8.3

Table (2): Displays that, 68.3% of school age children wereat age of 10-12 yearswith mean age at 9.76 ± 1.86and 51.7% were female. 53.3% of them were birth order3-4.51.7% of themwere succeeded with goodscholastic achievement.

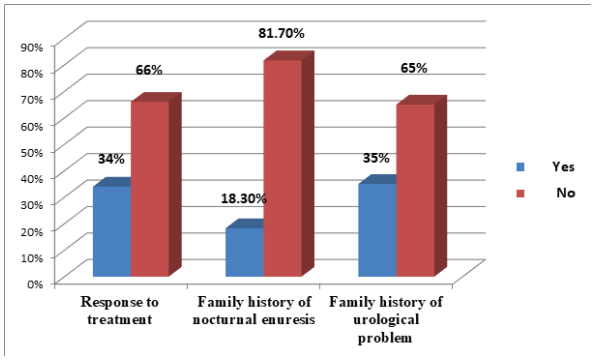

Figure 1: Distribution of school-age children related response to treatment, family history of enuresis and family history of the urological problem

Figure 1: Shows that, 81.7% of school age children were had no family history of nocturnal enuresis, 65.0% of them were had no family history of the urological problem and 66% of the school-age response to treatment.

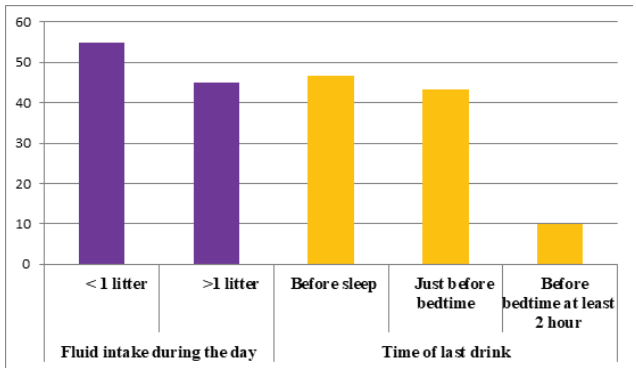

Figure 2: Distribution of school-age children relatedfluid intake during the day and time of last drink

Figure 2: As regarding fluid intake during the day, 55.0% take less than 1 litter. Concerning to time of last drink, 46.7% were taking last drink before sleep.

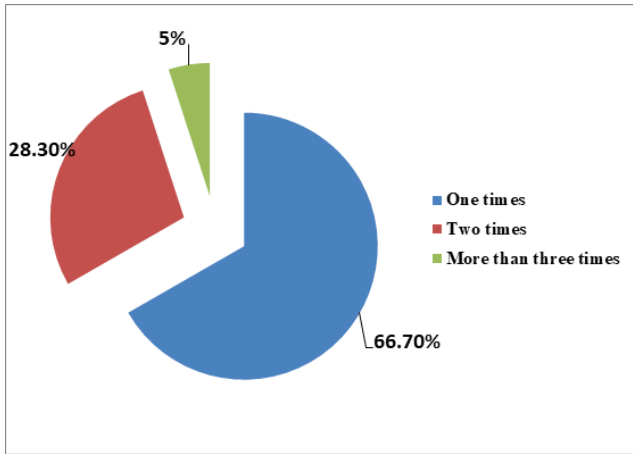

Figure 3: Distribution of school-age children related frequency of enuresis during night (n=60)

Figure 3: Regarding school-age children frequency of enuresis during the night was 66.7% of them had one-time enuresis during the night.

Table (3) Distribution of parents knowledge about nocturnal enuresis pre, post, and follow-up program implementation (n=60)

Knowledge	Pre						Post						Follow-up						X^2	P
	Wrong		Incomplete		Correct		Wrong		Incomplete		Correct		Wrong		Incomplete		Correct			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Definition	17	28.3	34	56.7	9	15.0	5	8.3	31	51.7	24	40.0	8	13.3	37	61.7	15	25.0	35.41	<0.001**

Cont... **Table (3) Distribution of parents knowledge about nocturnal enuresis pre, post, and follow-up program implementation (n=60)**

Causes	19	31.7	27	45.0	14	23.3	3	5.0	27	45.0	30	50.0	8	13.3	37	61.7	15	25.0	37.28	<0.001**
Sign and symptoms	25	41.7	28	46.7	7	11.6	3	5.0	30	50.0	27	45.0	12	20.0	32	53.3	16	26.7	57.46	<0.001**
Common age of nocturnal enuresis	16	26.7	32	53.3	12	20.0	2	3.3	27	45.0	31	51.7	2	3.3	34	56.7	24	40.0	47.7	<0.001**
Routes of treatment	22	36.7	31	51.7	7	11.6	1	1.7	37	61.7	22	36.6	6	10.0	35	58.3	19	31.7	47.4	<0.001**
Problems associated with nocturnal enuresis	27	45.0	27	45.0	6	10.0	4	6.7	32	53.3	24	40.0	4	6.7	35	58.3	21	35.0	61.3	<0.001**
Prevention	18	30.0	32	53.3	10	16.7	0	0.0	28	46.7	32	53.3	0	0.0	37	61.7	23	38.3	44.7	<0.001**
Total	7	11.7	46	76.6	7	11.7	0	0.0	17	28.3	43	71.7	0	0.0	24	40.0	36	60.0	67.0	<0.001**

Table (3): Portrays that, there was the highly statistically significant difference between parent knowledge about nocturnal enuresis pre, post, and follow-up program implementation ($p<0.001$) in all item. Also, the highest percentage of the parent was 56.7% had average knowledge about nocturnal enuresis pre-program implementation related to the item of definition and prevention of nocturnal enuresis. While the highest percentage was 61.7% of the parent had average knowledge about nocturnal enuresis follow-up program implementation related to the definition, causes, and prevention of nocturnal enuresis.

Table (4) Distribution of school-age children knowledge about nocturnal enuresis pre, post, and follow-up program implementation (n=60)

Knowledge	Pre						Post						Follow-up						X^2	P
	Wrong		Incomplete		Correct		Wrong		Incomplete		Correct		Wrong		Incomplete		Correct			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Definition	34	56.7	23	38.3	3	5.0	12	20.0	38	63.3	10	16.7	20	33.3	35	58.3	5	8.4	18.00	<0.001**
Causes	27	45.0	30	50.0	3	5.0	16	26.7	40	66.7	4	6.6	16	26.7	39	65.0	5	8.3	5.62	>0.05
Sign and symptoms	30	50.0	27	45.0	3	5.0	14	23.3	39	65.0	7	11.7	15	25.0	42	70.0	3	5.0	8.91	<0.05*
Commonage of nocturnal enuresis	31	51.7	26	43.3	3	5.0	10	16.7	45	75.0	5	8.3	24	40.0	34	56.7	2	3.3	17.2	<0.001**
Routes of treatment	34	56.7	25	41.6	1	1.7	15	25.0	43	71.7	2	3.3	20	33.3	39	65.0	1	1.7	11.76	<0.003**
Problems associated with nocturnal enuresis	30	50.0	27	45.0	3	5.0	28	46.7	30	50.0	2	3.3	23	38.3	36	60.0	1	1.7	1.34	>0.05
Prevention	34	56.7	23	38.3	3	5.0	12	20.0	39	65.0	9	15.0	15	25.0	41	68.3	4	6.7	18.16	<0.001**
Total	32	53.3	28	46.7	0	0.0	5	8.3	53	88.4	2	3.3	8	13.3	52	86.7	0	0.0	34.33	<0.001**

Table (4): reveals that there was highly statistically significant difference between children knowledge about nocturnal enuresis pre, post, and follow-up program implementation ($p<0.001$) in all item except causes and problem

associated with nocturnal enuresis (p>0.05). Also, the highest percentage of childrenwas 56.7% had poor knowledge about nocturnal enuresis pre-program implementation related to the item of definition and prevention of nocturnal enuresis. While the highest percentage was 75.0% of children had average knowledge about nocturnal enuresis post-program implementation related to the common age of nocturnal enuresis.

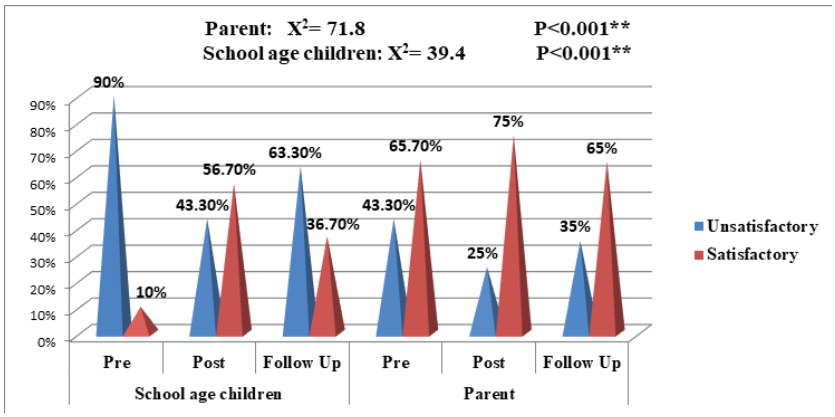

Figure (4): Total knowledge for parent and school-age children about nocturnal enuresis pre, post and follow-up program implementation (n=60)

Figure 4: this figure shows, there was the highly statistically significant difference between parent and children knowledge about nocturnal enuresis pre, post and follow-up program implementation (x^2 =71.8, p<0.001 and x^2 = 39.4, p<0.001) respectively. Also this figure shows that, 56.70% of children and 75% of parent have satisfactory knowledge about nocturnal enuresis post program implementation.

Table (5) Behavior intervention for parentsabout nocturnal enuresis pre, post, and follow-up program implementation (n=60)

Items	Pre				Post				Follow-up				X^2	P
	Not done		Done		Not done		Done		Not done		Done			
	N	%	N	%	N	%	N	%	N	%	N	%		
Awaking for voiding	35	58.3	25	41.7	13	21.7	47	78.3	23	38.3	37	61.7	15.82	<0.001**
Water restriction	34	56.7	26	43.3	21	35.0	39	65.0	28	46.7	32	53.3	5.77	<0.05*
Reward system	42	70.0	18	30.0	21	35.0	39	65.0	27	45.0	33	55.0	15.26	<0.001**
Bladder exercise	33	55.0	27	45.0	22	36.7	38	63.3	27	45.0	33	55.0	4.33	>0.05
Conditioning alarm system	32	53.3	28	46.7	24	40.0	36	60.0	29	48.3	31	51.7	1.92	>0.05
Diapering	37	61.7	23	38.3	21	35.0	39	65.0	26	43.3	34	56.7	8.55	<0.05*
Total	**18**	**30.0**	**42**	**70.0**	**2**	**3.3**	**58**	**96.7**	**8**	**13.3**	**52**	**86.7**	**16.33**	**<0.001****

Table (5):illustrates that there was the highly statistically significant difference between behavior intervention for the parent with children have nocturnal enuresis pre, post and follow-up program implementation (p<0.001) in the item related to awaking for voiding, reward system and diapering (p<0.001). Also, this table shows that, the highest percentage of parent were 61.7% had not done diapering pre program implementation. While, the highest percentage was 78.3% of the parent had done awaking for voiding post program implementation.

Table (6) Behavior intervention of school-age children with nocturnal enuresis pre, post and follow-up program implementation (n=60)

Items	Pre				Post				Follow-up				X^2	P
	Not done		Done		Not done		Done		Not done		Done			
	N	%	N	%	N	%	N	%	N	%	N	%		
Awaking for voiding	39	65.0	21	35.0	24	40.0	36	60.0	23	38.3	37	61.7	10.15	<0.006**
Water restriction	33	55.0	27	45.0	25	41.7	35	58.3	28	46.7	32	53.3	2.27	>0.05
Reward system	37	61.7	23	38.3	30	50.0	30	50.0	27	45.0	33	55.0	3.16	>0.05
Bladder exercise	35	58.3	25	41.7	17	28.3	43	71.7	30	50.0	30	50.0	13.28	<0.001**
Conditioning alarm system	39	65.0	21	35.0	20	33.3	40	66.7	22	36.7	38	63.3	14.53	<0.001**
Diapering	37	61.7	23	38.3	21	35.0	39	65.0	27	45.0	33	55.0	8.52	<0.05*
Total	**21**	**35.0**	**39**	**65.0**	**6**	**10.0**	**54**	**90.0**	**8**	**13.3**	**52**	**86.7**	**13.72**	**<0.001****

Table (6): illustrates that there was the highly statistically significant difference between behavior intervention for children with nocturnal enuresis pre, post and follow-up program implementation ($p<0.001$) in all item except item of water restriction,reward system, and diapering was statistically significant difference at ($p<0.05$).Also, this table shows that, the highest percentage of children were65.0% had not done awaking for voiding preprogram implementation. While the highest percentage was 71.7% of children had done bladder exercise post program implementation.

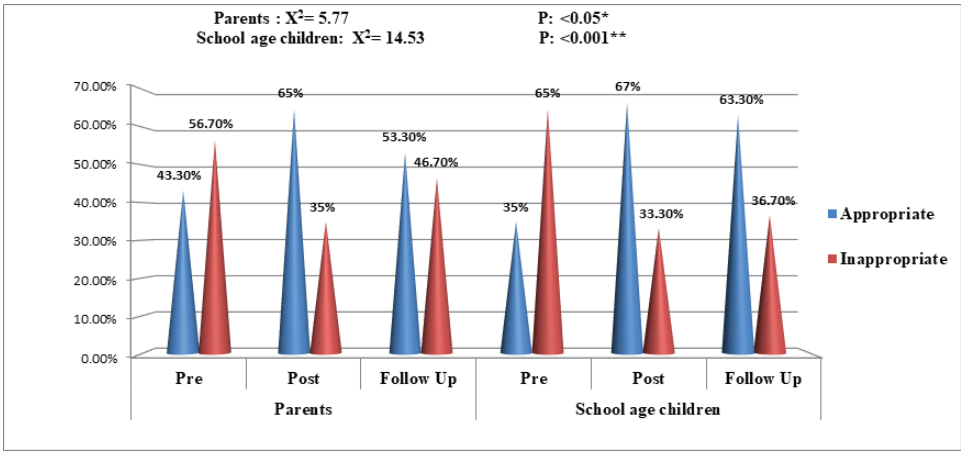

Figure (5) Total behavior intervention of parent and school-age children about nocturnal enuresis pre, post and follow-up program implementation (n=60)

Figure 5: illustrates that, there was the statistically significant difference between parent behavior intervention about nocturnal enuresis pre, post and follow-up program implementation ($x^2=5.77$, $p<0.05$). Also this figure shows that, there were the highly statistically significant difference between school age children behavior intervention about nocturnal enuresis pre, post and follow-up program implementation ($x^2=14.53$, $p<0.001$). Also this clarified that, 65.0% of children and 67.0% of parent have appropriate behavior about nocturnal enuresis post program implementation.

Table (7) Correlation coefficient between parent knowledge and behavior intervention with school-age children pre, post and follow-up program implementation (n=60)

School-age children	Parents											
	Knowledge						Behavior intervention					
	Pre		Post		Follow-up		Pre		Post		Follow-up	
	r	p	r	p	r	p	r	p	r	p	r	p

Cont... **Table (7) Correlation coefficient between parent knowledge and behavior intervention with school-age children pre, post and follow-up program implementation (n=60)**

Knowledge Pre Post Follow-up	0.18 0.11 0.15	>0.05 >0.05 <0.05*	0.18 0.25 0.21	>0.05 <0.05* <0.05	0.00 0.05 0.05	>0.05 >0.05 >0.05						
Behavior intervention Pre Post Follow-up							0.14 0.26 0.03	>0.05 <0.05* >0.05	0.02 0.03 0.06	>0.05 >0.05 >0.05	0.00 0.05 0.15	>0.05 <0.05* <0.05*

Table (7): represents that, there was positive correlation coefficient between parent knowledge post-program implementation with children knowledge follow-up program implementation r = 0.15, p<0.05 and between parent and children knowledge post program implementation r=0. 25, p <0.05, Also,there was positive correlation coefficient between parent behaviorpre program and implementation and children post program implementation r= 0.26, p <0.05 and between parent and children behavior follow-up program implementation r= 0.15, p<0.05.

Table (8) Correlation coefficient between parents and school-age children's knowledge and behavioral intervention with their socio-demographic pre, post and follow-up program implementation (n=60)

Socio-demographic	Knowledge						Behavioral intervention					
	Pre		Post		Follow-up		Pre		Post		Follow-up	
	r	p	r	p	r	p	r	p	r	p	r	p
Parents												
Age	0.05	>0.05	0.09	>0.05	0.00	>0.05	0.16	>0.05	0.04	>0.05	0.02	>0.05
Sex	0.15	>0.05	0.21	>0.05	0.09	0.05	0.08	>0.05	0.13	>0.05	0.04	>0.05
Marital status	0.04	>0.05	0.08	>0.05	0.19	>0.05	0.09	>0.05	0.20	>0.05	0.10	>0.05
Educational level	0.19	>0.05	0.29	<0.05*	0.24	<0.05*	0.05	>0.05	0.11	>0.05	0.25	<0.05*
Residence	0.16	>0.05	0.02	>0.05	0.01	>0.05	0.03	>0.05	0.09	>0.05	0.13	>0.05
Job	0.15	>0.05	0.25	<0.05*	0.21	>0.05	0.05	>0.05	0.31	<0.05*	0.27	<0.05*
Socioeconomic level	0.15	>0.05	0.07	>0.05	0.14	>0.05	0.14	>0.05	0.03	>0.05	0.06	>0.05
School age children												
Age	0.20	>0.05	0.25	<0.05*	0.13	>0.05	0.15	>0.05	0.24	<0.05*	0.20	>0.05
Sex	0.37	<0.01**	0.01	>0.05	0.14	>0.05	0.04	>0.05	0.10	>0.05	0.20	>0.05
Birth order	0.11	>0.05	0.08	>0.05	0.15	>0.05	0.12	>0.05	0.14	>0.05	0.22	>0.05
Scholastic achievement	0.23	>0.05	0.27	<0.05*	0.18	>0.05	0.12	>0.05	0.26	<0.05*	0.13	>0.05

Table (8): represents that, there were positive correlation coefficients between parent knowledge post program implementation with their job (r = 0.25, p<0.05) and between educational level post and follow-up program implementation (r= 0.29, p<0.05 and r= 0.24, p<0.05) respectively. Also there were positive correlation coefficient between parent behavior post program implementation and their educational level (r= 0.25, p<0.05) and between job post and follow-up program implementation (r= 0.31, p <0.05 and r= 0.27, p<0.05) respectively.

Also this table illustrates that, there positive correlation coefficient between children age and

scholastic achievement with their knowledge post program implementation (r= 0.25, p<0.05 and r= 0.27, p<0.05) respectively, and between children sex and pre program implementation (r= 0.37, p<0.01). Also there were positive correlation coefficients between children behavior intervention and their age and scholastic achievement (r= 0.24, p<0.05 and 0.26, p<0.05) respectively.

DISCUSSION

Counseling intervention program are directed to parents regarding toilet training, especially for families with positive history of nocturnal enuresis. Parents must done routine physical examination and laboratory investigations for their children to early evaluation and proper intervention. In addition a positive attitude and motivation to be dry are important components of nocturnal enuresis intervention. Children with nocturnal enuresis benefit from a caring and patient parental attitude; punishment has no role to play in care (9). The current study was to evaluate the effect of educational module on school age children and their parent's knowledge and behavior intervention about nocturnal enuresis.

In our study related socio-demographic characteristics of the parents of school-age children with nocturnal enuresis that table 1 revealed was clear that, 66.7% of parents were age 26-36 years with mean31.7 ± 5.37 and 93.3% of them were married. As regarding level of education, 45.0 % of parents had secondary education. As regarding residence, 53.3% were living in urban. Concerning parent's job, 63.3% were working. This result in the same line with the study done by [20] who found that regarding occupation (72%) of mothers were employees, while (56%) of mothers were within the age group(26-35years) and living in urban area. Regarding the level of education (72%) and (80%) of them were graduated from the secondary school.

In relation to table 2displayed that, 68.3% of them were at age of 10-12 years with mean 9.76 ± 1.86 and 51.7% were female. 53.3% of them were birth order 3-4. Also, 51.7% of them were succeeded with good scholastic achievement. This result was matched with the study done by [7] who found that the ages of the children ranges from age six to age twelve. The mean age of the children is nine. The males are (61.63%) while the female children are 38.37%. Children that bed wets are majorly male children as the 60% of the children that bed wets are male while 39% of those children are female. In addition [10] indicated that the majority of the studied children were at age group from 8-10 years old 78.6% and 54.3% were male, while, 52.9% were first and second birth order. On the other hand the study was done by [4] who found that the frequency of enuresis was significantly higher among girls than boys (P = 0.05). In addition, found that 31.4% of children with enuresis succeeded with satisfactory grades. Also [2] reported that the school-age children with enuresis poor academic achievements. Also the study done by [17] who found that the prevalence of enuresis in Slovenia is 12.4% and occurs more among boys and children with genetic predisposition.

Concerning the school-age children pattern of enuresis figure1-2-3 show that, 81.7% of school-age children were had no family history of nocturnal enuresis, 65.0% of them were had no family history of the urological problem and 66% of them response to treatment.55.0% of them take less than 1 litter fluid intake during the day. Concerning to time of last drink, 46.7% of them were take last drink before sleep and 66.7% of them had one-time enuresis during night. This finding was in accordance with the study done by [10] who reported that 54.3% had positive family history of nocturnal enuresis. 65.7% of children had fluid intake in the morning less than one liter and 80% took their last drink just before bedtime. In addition the study done by [4] who stated that the total prevalence of enuresis was (7.81%). The enuresis was significantly associated with positive family history, history of urinary tract infection and total behavioral problems. On the other hand the study done by [15] who found that positive family history and 70% of children with nocturnal enuresis.

In this current study table 3 portrayed that, there was highly statistically significant difference between parent knowledge about nocturnal enuresis pre, post and follow-up program implementation at (p<0.001) in all item. Also the highest percentage of parent was 56.7% had average knowledge about nocturnal enuresis preprogram implementation related to item of definition and prevention of nocturnal enuresis. While the highest percentage was 61.7% of parent had average knowledge about nocturnal enuresis follow-up program implementation related to definition, causes and prevention of nocturnal enuresis. This in the same line with the study done by [20] who indicated that

the educational program had a positive effect on the knowledge of parents. Also, recommend that preparing and implementing the educational program for parents of children with enuresis and for medical and nursing staff to give them knowledge about the condition. In the study done by [24] showed that, mothers' levels of knowledge improved after the educational program.

As regarding school age children knowledge about nocturnal enuresis pre, post and follow-up program implementation table 4 reveals that, there was highly statistically significant difference between children knowledge about nocturnal enuresis pre, post and follow-up program implementation. This result were matched with the study done by [23] who recommended that it is important to provide parents and children advice and information on fluids and toileting, more detailed advice and support about alarms. In addition the study done by [22] who reported that importance of information taken from professional healthcare achieve many difference for school age children through understanding and demonstrating the enuresis, as treatment options, coping strategies and alternative sources of support. On the other hand enuresis had negative impact on school age children as low of self-esteem, stress and stigma.

Regards behavior intervention for parent about nocturnal enuresis pre, post and follow-up program implementation table 5 illustrated that, there was highly statistical significant difference between behavior intervention of parent pre, post and follow-up program implementation in item related to awaking for voiding and diapering at ($p<0.001$). This result matched with the study done by [2] who reported that61.4% of their parents was greatly concerned with the impact of enuresis. Only 15.7% of the parents preferred medical treatment modalities, others preferred awaking the child for voiding, water restriction, diapering, alarm and bladder exercises in decreasing order. Also the study done by [9] who reported that parents have lack of knowledge about management of children with enuresis and different practices followed in management of children with enuresis and the awareness to the parents which can result in improvement in child condition. The current study in the same line with study done by [15] who found that awaking the child up during night for voiding (45 %) and no drinking water before sleep (36.4 %), (41%) commonly used drug was Imipramine. Also the study done by [8] who found that significant improvement was noticed after alarm intervention

In relation table 6 illustrates that, there was highly statistical significant difference between behavior intervention of children with nocturnal enuresis pre, post and follow-up program implementation ($p<0.001$) in all item except item of water restriction ($p>0.05$). This result was contrast with study done by [6] who reported that simple behavioral interventions as rewards, lifting and waking and bladder training were significantlly decrease enuresis at nights, compared with alarm and drug. However, the effect was not sustained at follow-up after completion of treatment for the drug therapies. Also cognitive therapy was more effective than rewards. Beside the study done by [26] who stated that the children less than 6 years responded well to the non-pharmacological measures. Encouraging results were seen in the age group of sixty to eight years with a cure rate of 78.57% and a cure rate of 85.71% and 100% in age group of 8 to10 and 10 to 12years respectively.

In relation to table 7 represents that, there was positive correlation coefficient between parent knowledge post program implementation with knowledge of school age children follow-up program implementation $r = 0.15$, $p<0.05$ and between parent and children knowledge post program implementation $r=0.25$, $p<0.05$, Also there was positive correlation coefficient between parent behavior preprogram implementation and school age children post program implementation $r= 0.26$, $p <0.05$ and between parent and school age children behavior follow-up program implementation $r= 0.15$, $p<0.05$.This result matched with the study done by [20] who found that the highly significant differences in parent's knowledge in pre-test and post-tests results reveal that the educational program is easy and simple to all participants and the parent's knowledge can be developed and improved through applying this program and gives parents an opportunity to continue and promote their knowledge. Also the study done by [24] who found that there were statistically significant relations between mothers' level of knowledge about enuresis, attitude and practice.

Concerning table 8 represents that, there were positive correlation coefficients between parent knowledge post program implementation with their job and between educational level post and follow-up program implementation. There was positive correlation coefficient between school age children with their age and scholastic achievement with their knowledge post program implementation, and between children sex and pre program implementation. The current study in the

same line with the study done by [28] who found that achievement of dryness was significantly related to low maternal education ($p = 0.022$) and low social class ($p = 0.009$). Also the study was done by [9] who reported that there was an association between knowledge and demographic variables $P<0.05$ was considered significant. The findings on relationship showed there existed association between practices about management of children with enuresis and selected demographic variables like mothers' age, education, type of family and number of children. In addition the study done by [19] who stated that enuresis was more common among children with positive familial history, those with deep sleep, high water consumption, sniffing, low educated and low income parents, mouth breathing, urinary tract infection and children with history of physical punishment.

CONCLUSION

The educational module program was influenced positively in improving school-age children and their parent's knowledge and behavior intervention about nocturnal enuresis

- Recommendations

-Updates and continuous counseling program for parent and their children with nocturnal enuresis are critical to improve their knowledge, early detect and intervention to avoid the negative consequences of nocturnal enuresis.

-Parents of the school-age child should be supportive and encouraging him to pass the problem of nocturnal enuresis.

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REFERENCES

1- Abu Salem, M, E., El-Shazly, H,M., and Hassan, A,Z., (2016): Nocturnal enuresis among primary school children in Zarka district, Damietta governorate, Egypt. Menoufia Medical Journal;29:1025-32.

2- Al-Kot, M., and Deeb,M.,(2012): Nocturnal enuresis among school children in Menoufia governorate: a hidden problem, Journal American Science, 8 (1) (2012), pp. 328–334.

3- Aljefri, H,M., Basurreh, O,A., Yunus, F., and Bawazir, A,A., (2013): Nocturnal enuresis among primary school children. Saudi Journal Kidney Disease Transplant 24:1233–1241

4- Al-Zahrani, S,S., (2014): Nocturnal enuresis and its treatment among primary-school children in Taif, KSA, International Journal of Research in Medical Sciences, 2(1):91-94 .

5- Bakhtiar, K., Pournia, Y., Ebrahimzadeh, F., Farhadi, A., Shafizadeh, F., and Hosseinabadi, R., (2014): Prevalence of nocturnal enuresis and its associated factors in primary school and preschool children of khorramabad in International Journal Pediatric.

6- Caldwell, PHY, Nankivell, G., and Sureshkumar, P., (2013): Simple behavioural interventions for nocturnal enuresis in children. Cochrane Collaboration Database of Systematic Reviews, Issue 7.

7- Chinawa, J,M., Manyike, P,C., Obu, H,A., Odetunde, O,I., Aniwada, E,C.,and Ndu, I,K., (2014): Behavioral Disorder amongst Adolescents Attending Secondary School in Southeast Nigeria, Behavioural Neurology, Volume (4), 10 pages.

8- Claudius,G., Chhatwal,J., Sohi, I., (2016): Efficacy of alarm intervention in primary monosymptomatic nocturnal enuresis in children, International Journal of Contemporary Pediatrics, May;3(2):621-624.

9- Duraphe, V., and Bajaj, K., (2015):A study to assess knowledge and practices of mothers about management of children with enuresis residing in kamgarnagar, pimprichinchwad Municipal Corporation, Pune-18, Innovational Journal of Nursing and Healthcare (IJNH), Vol 1 (3), 179-185 www.ijnursing.com

10- Elbahnasawy, H,T., and Elnagar, M,A.,(2015): Psychological Impact of Nocturnal Enuresis on Self-esteem of School Children, American Journal of Nursing Research, Vol. 3, No. 1, 14-20.

11- Fleming, E., (2012): Supporting children with nocturnal enuresis. Nursing Times; 108, 41: 22-25.

12- Gupte, S., (2009): A Short Textbook of Pediatrics. (11th ed) Jaypee Brothers Medical Publishers :50-

51.

13- Hamed, A., Yousf, F, and Hussein, M,M ., (2017): Prevalence of nocturnal enuresis and related risk factors in school-age children in Egypt: an epidemiological study, World Journal Urology, March;35(3):459-465.

14- Harari, M,D., (2013): Nocturnal enuresis. Journal Paediatric Child Health 49:264–271.

15- Hassoni,R,N., and Al Hashimi, B,A., (2017): Nocturnal enuresis in children and its associated factors:an experience from the Child Welfare Teaching Hospital in Baghdad, Iraqi New Medical Journal July;3(2).

16- Hubballi, J., Chonyi, T., Sabu, T., David, T., Vaidya, U., Sangpo, L., (2016): To Assess the Knowledge Regarding Nocturnal Enuresis among Mothers of Children Admitted In Selected Hospitals, Belagavi Karnataka, View To Develop Self Instructional Module" , IOSR Journal of Nursing and Health Science, Volume 5, Issue 6, PP 07-09.

17- Karničnik, K., Koren, A., Kos, N., and Varda, N,M., (2012): Prevalence and Quality of Life of Slovenian Children with Primary Nocturnal Enuresis, International Journal of Nephrology, Volume 12, 6 pages.

18- Mohammed, A,H., Saleh, A,G., and Al-Zoheiry.,(2014):Frequency of bedwetting among primary school children in Benha city, Egypt,Egyptian Journal of Medical Human Genetics,Volume 15, Issue 3, Pages 287–292.

19- Makrani,A,H., , Moosazadeh,M., Nasehi,M,M., Abedi,G., Afshari ,M., Farshidi,F., Aghaei,S.,(2015):Prevalence of Enuresis and its Related Factors among Children in Iran: A Systematic Review and Meta-analysis, International Journal of Pediatric, Vol.3, N.6-1.

20- Najeeb, M.S., (2012): Effect of the Educational Program upon Parents' Knowledge of Nocturnal Enuretic Children, World Journal of Medical Sciences 7 (3): 137-146.

21- National Institute for Health and Clinical Evidence (NICE)., (2010): The Management of Bedwetting and Nocturnal Enuresis in Children and Young People. London.

22- Norfolk, S, and Wootton, J., (2012): Nocturnal enuresis in children, Nursing Standard. 27, 10,49-56.

23- O'Flynn, N., (2001): Nocturnal enuresis in children and young people: NICE clinical guideline,British Journal General Practice . 61(586): 360–362.

24- Osman, Z., Ali, S., and Kamel, N., (2016): Impact of An Educational Program on Mothers' Knowledge, Attitude And Practice Regarding Their Children With Nocturnal Enuresis, International Journal of Advanced Research Volume 4, Issue 6, 771-782.

25- Rimple, S., (2010): Text book of Pediatric Nursing, 1st edition, New Delhi, Jaypee Brothers Publication,p .455-457.

26- Singh, N., and Prasad, V., (2011): Effectiveness Of Non Pharmacological Therapy On Bed Wetting In Children, Journal of Drug Delivery & Therapeutics; 1(1), 78-80 78.

27- Sanders, C., and Bray, L., (2013): Young people's evaluation of a nurse-led bladder training service: working towards developing a patient reported experience and outcome measure. International Journal of Urological Nursing 7: 25-32.

28- Senbanjo, I,O., Oshikoya, K,A., and Njokanma, O,F., (2011):Micturitional dryness and attitude of parents towards enuresis in children attending outpatient unit of a tertiary hospital in Abeokuta, Southwest Nigeria,African Health Science,11(2):244-51.

29- Stover, AC, Dunlap, G, and Neff, B., (2008): The Effects of a Contingency Contracting Program on the Nocturnal Enuresis of Three Children. Res Social Work Practice. 18(5):421-8.

30- Tripathi, A,P., and Srivastava, S., (2008): Bed wetting & common habit disorders in school going children, Indian Journal of Medical Research 713.

31- Vaibhavi., M. D.,(2015): Management of enuresis: Need to focus on parents' knowledge and practice, International Journal of Nursing Research (IJNR) International Peer Reviewed Journal, IJNH Vol 1 (3), 139-145.

32- Yeung, C. K., Sreedhar, B., Sihoe, J. D., Sit, F. K.,and Lau, J., (2006): Differences in characteristics of nocturnal enuresis between children and adolescents: a critical appraisal from a large epidemiological study. BJU international;97:1069-73.