

## Assessment of Knowledge, Attitude and Reported Practices of the Mothers Having Children Suffering from Nocturnal Enuresis

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### Abstract:

Nocturnal enuresis is common childhood disorder that generates countless burdens to children and their families. It has a negative influence on all aspects of life for children and their families as it is associated with significant social disruption and psychological stress. **The aim of this study is to:** Assess of knowledge, attitude and reported practices of the mothers having children suffering from nocturnal enuresis. **Design:** Descriptive research design was applied in this study. **Setting:** This study was conducted at urology outpatient clinics in school health unit affiliated to the Health Insurance at Beni-Suef Governorate. **Sample:** Purposive sample of 259 mothers have children diagnosed with nocturnal enuresis. **Tools:** One tool, structured interviewing questionnaire, contained four parts, the first part consisted of demographic characteristics of mothers, demographic characteristics of mothers and their children, past and present medical history of children, mothers' knowledge regarding nocturnal enuresis, mothers' attitude regarding nocturnal enuresis and mothers' reported practices regarding nocturnal enuresis. **Results:** The study showed that, 69.6 % of studied mothers had poor level of total knowledge about nocturnal enuresis, 58.3 % of them had negative attitude toward nocturnal enuresis and 60.6 % of them had unsatisfactory level of total reported practices regarding nocturnal enuresis. **Conclusion:** There was high significant statistical positive correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding nocturnal enuresis **Recommendation:** Implementation of health education program for mothers about nocturnal enuresis is essential to update their knowledge and skills about advanced treatment strategies.

**Key words:** Attitude, Knowledge, Mothers, Nocturnal Enuresis, Practices

### Introduction

Nocturnal enuresis (NE) is a prevalent childhood condition associated with significant emotional morbidity including anxiety, guilt, and diminished self-esteem. The associated social stigma exacerbates emotional distress, negatively impacting self-perception and overall quality of life. Children who experience bedwetting may suffer from significant emotional distress, leading to low self-esteem and social withdrawal. Parents often report feelings of frustration and helplessness, which can strain family dynamics. The stigma associated with bedwetting can result in bullying and social exclusion, further exacerbating the psychological impact on affected children (Adisu et al., 2025).

Nocturnal enuresis can be manifested in primary and secondary NE. Primary NE is the most common variant, representing approximately 80% of cases, occurs when a child has never achieved a period of nighttime dryness lasting longer than 6 months. Contrariwise, secondary NE develops after a child has achieved a period of nighttime dryness lasting more than 6 months. The underlying causes vary between these types: primary NE typically results from a combination of biological factors, including difficulty waking up from sleep despite stimuli, excessive urine production, small bladder capacity, over activity of bladder. Secondary NE represents 20% of cases, can develop due to the emergence of medical issues like urinary tract infections, hypothyroidism, renal disease, obstructive sleep apnea, diabetes insipidus, or psychological stress (Nigri et al., 2024).

Another important clinical classification of NE is into Monosymptomatic NE (MNE) and Non-monosymptomatic NE (NMNE) types. Monosymptomatic NE present without any manifestations of lower urinary tract (LUT) dysfunction (the only symptom is the release of urine during sleep) and generally the amount of urine are within the normal range. The term NMNE refers to children who, in addition to nighttime bedwetting, also experience daytime lower urinary tract symptoms such as urgency, daytime incontinence, difficulty voiding, and changes in the frequency of daytime urination (Cammisa & Ferrara, 2025).

The prevalence of nocturnal enuresis globally varies considerably, influenced by factors such as age, gender, and cultural background. Research indicates that approximately 10–20% of children aged 5 years' experience NE, with rates declining as children grow older. By adolescence, the prevalence drops to about 1–3%. Some studies suggest that boys are more likely to be affected than girls, with boys exhibiting higher rates of NE, particularly in younger age groups (**Adisu et al., 2025**).

The pathophysiology behind nocturnal enuresis is complex and multifactorial with causes including genetics (family history), environmental, and psychological stressors. In addition to delayed and immature nerve development, bladder immaturity and disturbances in antidiuretic hormone secretion and reception play roles. Numerous studies have shown multiple risk factors for NE including prolonged use of disposable diapers, male gender, and difficulty in awakening at night, mental stress, constipation, obstructive sleep apnea, socioeconomic level, anxiety, and exposure to violence (**Hamshari et al., 2024**).

Nocturnal enuresis impacts not only the physical health of affected children but also presents significant psychological and social challenges. It often leads to embarrassment, low self-esteem, and disrupted sleep patterns for children and their family. NE in children can trigger avoidance behaviors, like avoidance of overnight activities and sleepovers, leading to social isolation and increased embarrassment. Research exploring the link between psychiatric disorders and NE has found that nearly 20% of children with NE experience at least one of mental health disorder such as social anxiety disorder and separation anxiety disorder, with the prevalence of psychiatric conditions being 1.3 to 4.5 times higher compared to children without NE. (**Mohammad et al., 2025**).

Mothers of enuretic children are generally viewed as the primary caregiver. After each enuresis episode, the mothers take care of the cleaning, the laundry, and the prevention of skin diseases, as well as managing the emotional responses of the child and other family members. The fact that mothers often feel the need to keep their child's bedwetting a secret due to social and cultural stigmas adds another layer of complexity. This secrecy can unfortunately lead to isolation and a lack of access to support and information. Mothers also tend to present higher degrees of stress and anxiety. Therefore, empowering mothers with sufficient knowledge, fostering a positive and supportive attitude, equipping them with practical skills and effective coping mechanisms becomes crucial to support both the child and the mother in navigating and ultimately overcoming the challenges of NE (**Mohamed et al., 2025**).

Management strategies for NE involve several approaches including both pharmacological and non-pharmacological approaches. The chosen approach depends on several factors such as coexisting disorders, NE subtype, severity, child motivation, and parental compliance. Primary NE is typically managed with medications (particularly desmopressin drug for Monosymptomatic Nocturnal Enuresis (MNE) and anticholinergic drug might be used for Non-Monosymptomatic Nocturnal Enuresis (NMNE), enuretic alarm and behavioral interventions. While, management of secondary NE is consistent with treating the underlying medical conditions that caused NE ( **Zhai et al., 2025**).

Community health nurses are vital in addressing problem of nocturnal enuresis. They can initiate solutions and provide crucial health education to mothers and children about NE and its management. Given their role in family health, they are key figures in offering care, education, counseling, guidance, and support for children with NE. Providing mothers with accurate information about NE significantly improves treatment success by ensuring adherence to proper recommendations, increasing effectiveness, reducing recurrence, and minimizing negative impacts of NE on children and their families(**Liao et al., 2024**).

### Significance of the study

Nocturnal enuresis poses a significant challenge for Egyptian children and their mothers, resulting in considerable social, psychological, and clinical problems. This condition notably reduces the quality of life for both affected children and their families. Furthermore, in many Egyptian families, NE is often kept secret due to prevailing social and cultural norms.

**In Egypt**, the true prevalence of bedwetting in children is currently unknown due to a lack of comprehensive documentation. The prevalence NE in Egypt has not been accurately determined due to under-reporting, but individual studies in different Egyptian Governorates have estimated a prevalence rate. For example, in Elbehira Governorate, the

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prevalence of nocturnal enuresis was 13.9% in children (6-12 year olds) as stated by (Elazzazy et al., 2022). In Benha City, the prevalence of NE was 16.2 % in children (5-15 year olds) as stated by (Salem et al., 2024). According to study performed by (Abdeen et al., 2024), that conducted in Ain Shams University, Children's Hospital among 1587 Egyptian children, the overall prevalence of NE among children age group 6 to 16 years was 21%, that consisted of 209 (62.8%) boys and 124 (37.2%) girls.

Nocturnal enuresis (NE) is a hidden common pediatric disorder among children that is critical to be diagnosed and treated as soon as possible, as it can cause many psychological consequences, low self-esteem and poor scholastic achievements. Nocturnal enuresis can have a serious negative effect on the quality of life of children and their families (Salem et al., 2024). Therefore, this study will be done to assess knowledge, attitude and reported practices of the mothers having children suffering from nocturnal enuresis.

### Aim of the study:

The aim of this study was to assess knowledge, attitude and reported practices of the mothers having children suffering from nocturnal enuresis through the following objectives:-

- 1- Assessing mothers' knowledge regarding nocturnal enuresis.
- 2- Assessing mothers' attitude regarding nocturnal enuresis.
- 3- Assessing mothers' reported practice regarding nocturnal enuresis.

### Research questions:

- What are mothers' knowledge regarding nocturnal enuresis?
- What are mothers' attitude regarding nocturnal enuresis?
- What are mothers' reported practices regarding nocturnal enuresis?
- Are there relationships between demographic characteristic of studied mothers and their knowledge, attitude and reported practices regarding nocturnal enuresis?

### Subjects and Method

#### Research design:

A Descriptive research design was applied to achieve the aim of this study.

#### Setting:

The urology outpatient clinics in school health unit affiliated to the Health Insurance at Beni-Suef Governorate.

#### Subjects:

Purposive sample of 259 mothers have children diagnosed with nocturnal enuresis. The mothers have been selected according to the following inclusion criteria:

- 1- Mothers with children diagnosed with nocturnal enuresis.
- 2- Child age from 6-12 years.
- 3- Child free from other physical and psychological illnesses
- 4- Mothers accepting to participate in the study.

#### The Sample size was calculated by the following equation:

$$n = N [ 1 + N (e^2) ] \text{ (Adam, 2020).}$$

n = Sample size

N = Population size is 786

e = 0.5 is level of perception

$$n = 786 [ 1 + 786 (0.0025) ] = 259$$

The actual size of sample was 259 through year 2023-2024.

#### Tools for data collection:

Data was collected using the following one tool:

**Structured interviewing questionnaire** was designed based on literature review and approved by supervisors. It was written in simple Arabic language and consists of four parts.

**First part:**

**(A) Demographic characteristics of mothers and their children:** This part contained of 5 items, it includes data about mother's age, mother's educational level, mother's occupation, place of residence and monthly income.

**(B) Demographic characteristics of their children:** This part contained of 3 items, it includes data about child age, child gender and child order in the family.

**(C) Past and present medical history of children:** This part contained of 9 items, it includes data about onset of the disease, taken medication, causes of the disease, kinds of nocturnal enuresis, frequency of nocturnal enuresis, presence of constipation, presence of urinary symptoms, punishment of the child and family history of nocturnal enuresis.

**Part II: Mothers' knowledge regarding nocturnal enuresis:** This part contained of 12 questions, it concerned with mother's knowledge about nocturnal enuresis such as meaning of NE, the most vulnerable group for NE, types, common causes of NE, the important anatomical causes for NE, risk factor for NE, complication of NE, psychological effect of NE, main management for NE, the factors that contribute to the success of NE management, main control measures of NE and the methods of prevention of NE.

- **Scoring system:** The questionnaire was contained of 12 questions, each question evaluated as "the correct answer was scored as one grade and the incorrect answer or don't know was scored as a zero".
- The total scores of the questionnaire were 12 grades. These scores were summed and converted into a percent score. It was classified into 3 categories:
  - \* **Good** knowledge if score  $\geq 75\%$  (9-12 grades).
  - \* **Fair** knowledge if score from 50- < 75% (6 - < 9 grades).
  - \* **Poor** knowledge if score < 50 % (< 6 grades).

**Part III: Mothers' attitude regarding nocturnal enuresis: Developed by (Mohamed et al., 2019):** It includes 17 items and it concerned with mothers' attitude regarding NE such as mother think that NE does not cause anxiety and/or fear, NE can be resolved by time and NE is a lifelong disease, feel that can control the disease by adhering to the recommended interventions, think that early diagnosis of the disease helps prevent complications, think that the complications of NE are serious, think that behavioral therapy is more effective than medication, believe that NE is an embarrassing and shameful disease .....etc.

- **Scoring system:** Mother's attitude regarding nocturnal enuresis was contained of 17 items, the scale using a 3-point scale that ranges from 3 for "Agree", 2 for "Neutral" to 1 for "Disagree". The total scores of the scale were 51 grades.
- These scores were summed and converted into a percent score. It was classified into 2 categories:
  - \* **Positive attitude** if score  $\geq 60\%$ . (31- 51 grades).
  - \* **Negative attitude** if score from < 60% (17 - < 31grades).

**Part IV: Mothers' reported practices regarding their children with nocturnal enuresis Developed by (Essawy, 2018):** It consisted of 32 items. Concerned with mother's reported practices regarding their children with NE such as physical care (10 items), psychological care (6 items), the pharmacological therapy (4 items), bladder strengthening training (3 items), behavior training (5 items), attention training for dry bed (2 items) and rewarding for behavior modification (2 items).

- **Scoring system:** Mother's reported practices regarding their children with NE were contained of 32 items, the scale using a 3-point scale that ranges from 3 for "Always", 2 for "Sometimes" to 1 for "Never". The total scores of the scale were 96 grades.
- These scores were summed and converted into a percent score. It was classified into 2 categories:
  - \* **Satisfactory practice** if score  $\geq 60\%$ . (58 - 96 grades)
  - \* **Unsatisfactory practice** if score from < 60%. (32 - < 58 grades).

**Validity:-**

The validity of developed tool was tested through a panel of three experts in Community Health Nursing in Faculty of Nursing, Helwan University to review relevance of the tools for comprehensiveness, accuracy, understanding and applicability.

**Reliability:**

Testing the reliability of the tools through Alpha Cronbach reliability analysis, Cronbach's Alpha in this study found to be (0.961) for knowledge checklist, (0.845) for attitude checklist and (0.855) for reported practice checklist.

**Ethical considerations:**

An official permission to conduct the proposed study was being obtained from the Scientific Research Ethics Committee at Faculty of Nursing Helwan University. Participation in the study was voluntary and subjects was be given complete full information about the study and their role before signing the informed consent. The ethical considerations was include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs was be respected.

**II- Operational Item:****Preparatory phase:**

It was include reviewing of past, current, national and international literature and theoretical knowledge related to nocturnal enuresis, covering various aspects of the study using books, articles, internet, periodicals and journals to develop tools for data collection.

**Pilot study:**

The pilot study has been conducted to test clarity of questions, applicability and efficiency of tool. It also aimed to ensure simplicity, relevance and feasibility of conduction of the study tool. It has been conducted on 10 % (26) of mothers. The results of the pilot study helped in refining the interview questionnaire and to schedule the time framework. No modification was done so; the participants of pilot study were included from the main study sample.

**Field work:**

- Before conducting the study, an official permission was obtained from Dean of Faculty of Nursing, Helwan University to the director of Health Insurance Clinics at Bani Suef Governorate.
- The investigator met mothers and explained the aim of the study and its components after obtaining formal consent from the participants.
- The questionnaire were distributed and completed by researcher from studied mothers to assess their knowledge, attitude and reported practices regarding NE.
- Data was collected from beginning of October 2023 to the end of the March 2024, a period of six months and the researcher was attended two days (Sunday and Tuesday) per week from 9 am-12 pm in the study setting till completion of the questionnaire.
- The time needed to complete the questionnaire was about 25 - 35 minutes.

**Ethical considerations:**

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee, Faculty of Nursing, Helwan University. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent. The ethical considerations were include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it not be accessed by any other party without taking permission of the participants. Informed consent was taken from mothers to conduct the study. Objectives, tools and study technique were illustrated to gain their cooperation. Ethics, values, culture and beliefs were respected.



### III: Administrative Items:

Approval to carry out this study was obtained from dean of Faculty of Nursing, Helwan University and official permission was obtained and directed to the general manager of Health Insurance of Beni-Suef Governorate asking for cooperation and permission to conduct the study.

### IV: Statistical Analysis:

The collected data organized, tabulated and statistically analyzed using Statistical Package for Social Science (SPSS) version 25 for windows, running on IBM compatible computer. Descriptive statistics were applied (e.g. frequency, percentages, mean and standard deviation). Qualitative variables were compared using qui square test ( $\chi^2$ ) as the test of significance, and Paired T test (t) used to compare between means of quantitative variables. Pearson correlation test (r) was used to test the correlation between studied variables. Reliability of the study tools was done using Cronbach's Alpha. A significant level value was considered when  $p < 0.05$  and a highly significant level value was considered when  $p < 0.01$ . No statistical significance difference was considered when  $p > 0.05$ .

#### Significance of the results:-

- \* Statistically significant  $p < 0.05$ .
- \* Highly statistically significant  $p < 0.001$ .
- \* Not significant  $P > 0.05$ .

### Results

#### Part (I): Demographic characteristics of studied mothers and children suffering from nocturnal enuresis.

Table (1): Frequency distribution of the studied mothers according to their demographic data (n=259).

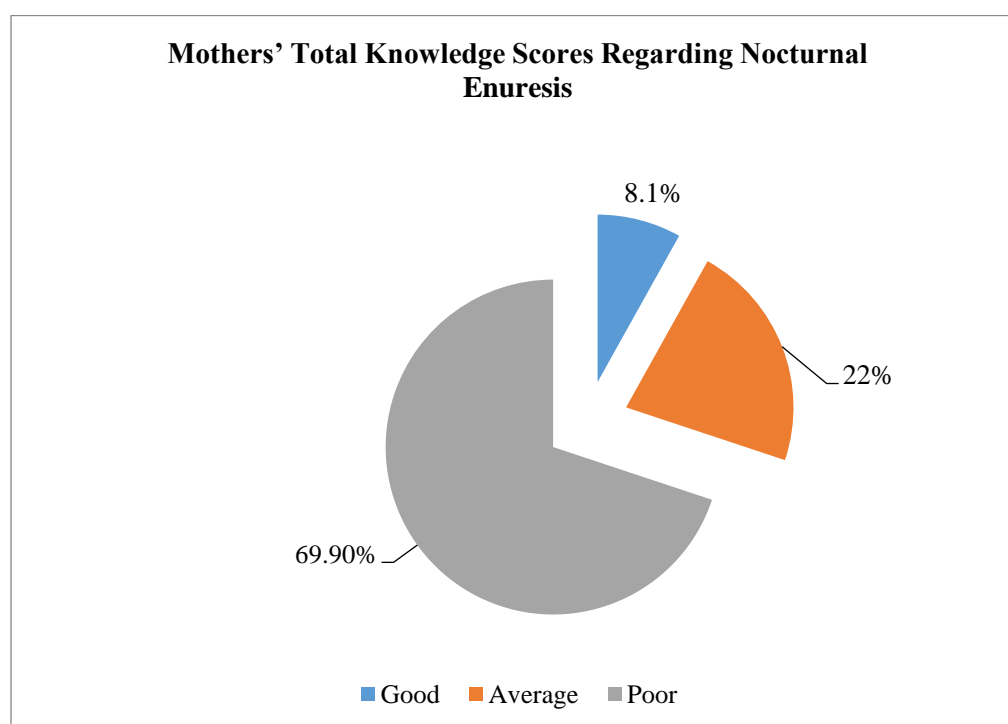
Mothers` demographic data	No.	%
<b>Age (years)</b>		
20-<25	90	34.8
25-<35	112	43.2
35-<45	46	17.8
45- ≤ 60	11	4.2
<b>Mean ± SD</b>	<b>34.93±6.54</b>	
<b>Educational level</b>		
Don't read and write	9	3.5
Read and write	44	17.0
Basic education	68	26.3
Secondary education	119	45.9
University education and more	19	7.3
<b>Mother's occupation</b>		
Housewife	130	50.2
Employed	129	49.8
<b>Place of residence</b>		
Urban	65	25.1
Rural	194	74.9
<b>Monthly income</b>		
Enough and save	28	10.8
Not enough	131	50.6
Enough	100	38.6

**Table (1):** shows that, 43.2% of the studied mothers were aged between 25-<35 years old, the mean SD of age was 34.93±6.54 years. Also, 45.9% of them had secondary education. Moreover, 50.2% of them were housewife. Furthermore, 74.9% of them reside at rural areas. Also, 50.6% of them didn't have enough income.

**Table (2):** Frequency distribution of the studied children according to their demographic data (n=259).

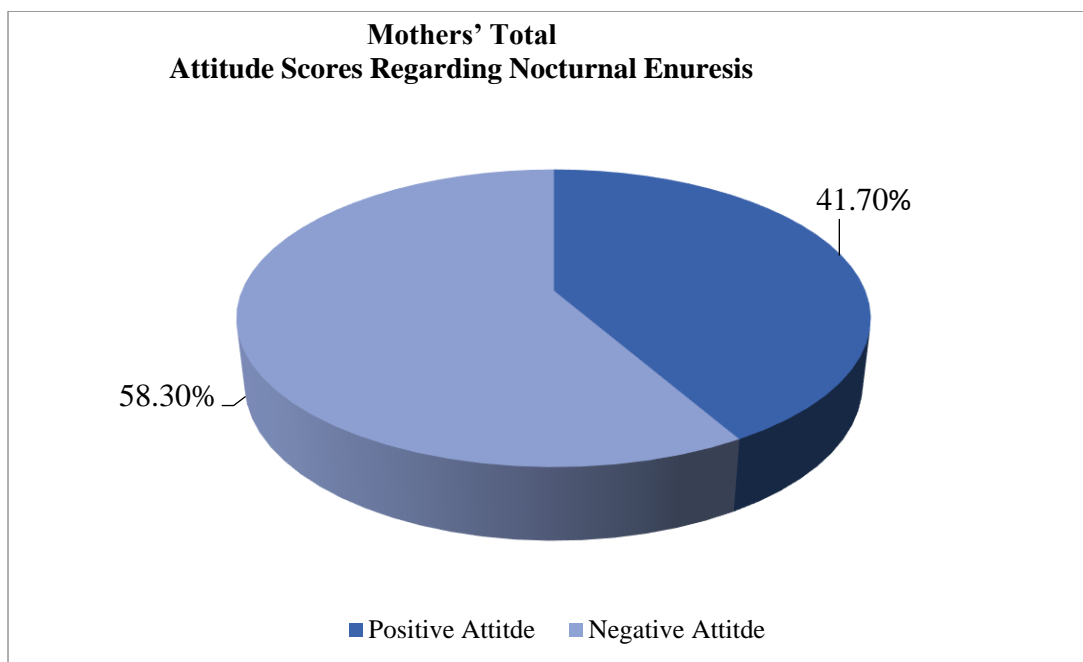
Demographic characteristics of studied children	No.	%
<b>Age (years)</b>		
6 - <9	205	79.2
9 - ≤ 12	54	20.8
<b>Mean ± SD</b>	<b>8.96 ± 2.63</b>	
<b>Gender</b>		
Male	182	70.3
Female	77	29.7
<b>Child's order in the family</b>		
First	100	38.6
Second	93	35.9
Third	48	18.5
Fourth and more	18	6.9

**Table (2):** shows that, 79.2% of the studied children were in the age group 6 - <9 years old, the mean SD of age was  $8.96 \pm 2.63$  years. Also, 70.3% of them were male. Moreover, 38.6% of them were the first child in the family.



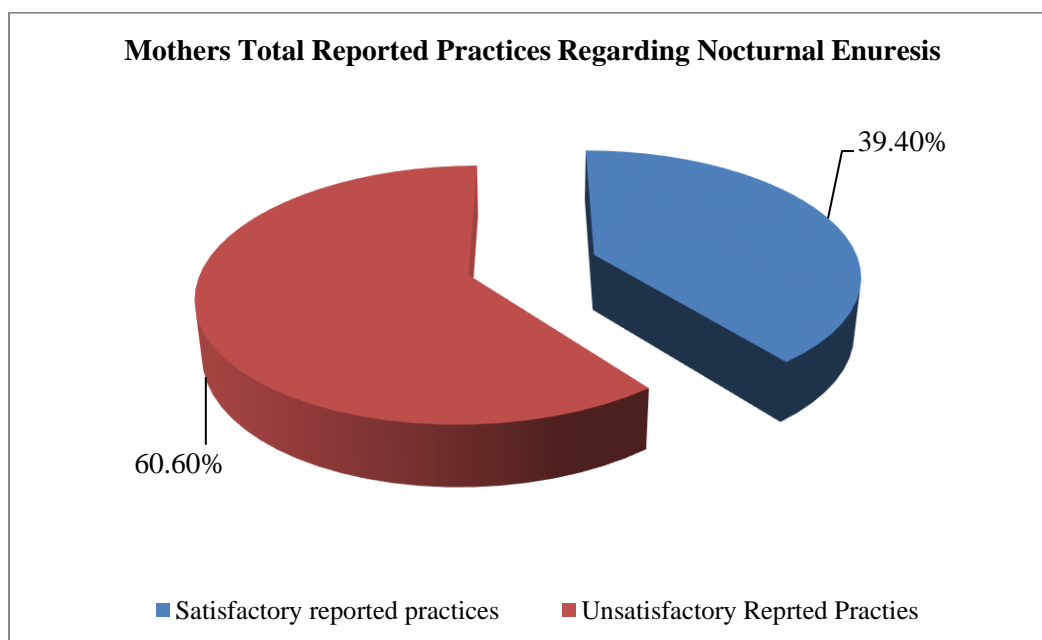
**Figure (1):** Percentage distribution of total mothers' knowledge scores regarding nocturnal enuresis (n=259).

**Figure (1):** illustrates that, shows that, 8.1% of the studied mothers had good level of total knowledge about nocturnal enuresis, while, 22.0 % of them had average level of total knowledge about nocturnal enuresis and 69.6 % had poor level of total knowledge about nocturnal enuresis.



**Figure (2): Percentage distribution of total mothers' knowledge scores regarding nocturnal enuresis (n=259).**

**Figure (2):** illustrates that, 41.7% of the studied mothers had positive attitude toward nocturnal enuresis, while 58.3 % of them had negative attitude toward nocturnal enuresis.



**Figure (3): Percentage distribution of total mothers' reported practices scores regarding nocturnal enuresis (n=259).**

**Figure (3):** clarifies that, 39.4% of the studied mothers had satisfactory level of total reported practices regarding nocturnal enuresis. While, 60.6 % of the studied mothers had unsatisfactory level of total reported practices regarding nocturnal enuresis.



## Part (VI): Relations between the studied variables.

Table (3): Relations between socio demographic characteristics of the studied mothers and their total knowledge regarding nocturnal enuresis (n=259).

Socio-demographic data	Total knowledge						X <sup>2</sup>	P-Value
	Good (n=21)		Average (n=57)		Poor (n=181)			
	No.	%	No.	%	No.	%		
Age (years)								
20-<25	8	38.1	27	47.4	55	30.4	13.92	0.031*
25-<35	8	38.1	23	40.3	81	44.8		
35-<45	2	9.5	7	12.3	37	20.4		
45- ≤ 60	3	14.3	0	0.0	8	4.4		
Education level								
Don't read and write	0	0.0	0	0.0	9	5.0	19.65	0.12*
Read and write	1	4.8	8	14.0	35	19.4		
Basic education	9	42.9	13	22.8	46	25.4		
Secondary education	7	33.3	35	61.4	77	42.5		
University education and more	4	19.0	1	1.8	14	7.7		
Occupation								
Housewife	10	47.6	16	28.1	104	57.5	15.03	.000**
Employed	11	52.4	41	71.9	77	42.5		
Place of residence								
Urban	7	33.3	16	28.1	42	23.2	1.371	0.504
Rural	14	66.7	41	71.9	139	76.8		
Monthly income								
Save and enough	4	19.0	5	8.8	19	10.5	8.330	0.080
Not enough	12	57.2	36	63.2	83	45.9		
Enough	5	23.8	16	28.0	79	43.6		

Table (3): presents that, there was highly statistically significant relation between total mothers' knowledge and their occupation at ( $P = < 0.01$ ). Also, there was a statistically significant relation with their age, and educational level at ( $P = < 0.05$ ). While there was no statistically significant relation with their place of residence and monthly income at ( $P = > 0.05$ ).

Table (4): Relations between demographic characteristics of the studied mothers and their total attitude regarding nocturnal enuresis (n=259).

Socio-demographic data	Total attitude				X <sup>2</sup>	P-Value
	Positive (n=108)		Negative (n=151)			
	No.	%	No.	%		
Age (years)						
20-<25	44	40.7	46	30.5	3.80	0.032*
25-<35	44	40.7	68	45.0		
35-<45	15	13.8	31	20.5		
45- ≤ 60	5	4.6	6	4.0		
Education level						
Don't read and write	2	1.9	7	4.6	7.15	0.002*
Read and write	12	11.1	32	21.2		
Basic education	32	29.6	36	23.8		
Secondary education	55	50.9	64	42.4		
University education and more	7	6.5	12	8.0		

Occupation						
Housewife	48	44.4	82	54.3	2.44	0.004*
Employed	60	55.6	69	54.7		
Place of residence						
Urban	25	23.1	40	26.5	0.374	0.541
Rural	83	76.9	111	73.5		
Monthly income						
Save and enough	12	11.1	16	10.6	1.525	0.467
Not enough	59	54.6	72	47.7		
Enough	37	34.3	63	41.7		

**Table (4):** presents that, there was statistically significant relation between total mothers' attitude and their age, educational level and occupation at ( $P = < 0.05$ ). While, there was no statistically significant relation with their place of residence and monthly income at ( $P = > 0.05$ ).

**Table (5):** Relations between demographic characteristics of the studied mothers and their total reported practices regarding nocturnal enuresis ( $n=259$ ).

Socio-demographic data	Total reported practices				X <sup>2</sup>	P-Value
	Satisfactory (n=102)		Unsatisfactory (n=157)			
	No.	%	No.	%		
Age (years)						
20-<25	34	33.3	56	35.7	1.15	0.043*
25-<35	44	43.1	68	43.3		
35-<45	18	17.7	28	17.8		
45- ≤ 60	6	5.9	5	3.2		
Education level						
Don't read and write	1	1.0	8	5.1	8.64	0.002*
Read and write	13	12.7	31	19.7		
Basic education	25	24.5	43	27.4		
Secondary education	52	51.0	67	42.7		
University education and more	11	10.8	8	5.1		
Occupation						
Housewife	48	47.1	82	52.2	0.661	0.416
Employed	54	52.9	75	47.8		
Place of residence						
Urban	25	24.5	40	25.5	0.031	0.861
Rural	77	75.5	117	74.5		
Monthly income						
Save and enough	12	11.8	16	10.2	0.227	0.893
Not enough	52	51.0	79	50.3		
Enough	38	37.2	62	39.5		

**Table (5):** presents that, there was statistically significant relation between total mothers' reported practices and their age, and educational level at ( $P = < 0.05$ ). While there was no statistically significant relation between total mothers reported practices with their occupation, place of residence and income at ( $P = > 0.05$ ).

## Part (VII): Correlation between the studied variables.

**Table (6):** Correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding nocturnal enuresis (n=259).

Variables		Total knowledge score	Total attitude score
Total attitude score	r	0.607	
	p	0.000**	
Total reported practices score	r	0.344	0.341
	p	0.000**	0.000**

R= Pearson correlation coefficient test. P= p-value. (\*\*) highly Statistically significant at  $p < 0.01$ .

**Table (6):** reveals that, there was high significant statistical positive correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding nocturnal enuresis.

## Discussion

Nocturnal enuresis is a widespread and emotionally challenging problem that significantly affects the mental well-being, daily living activities, feelings, behaviors, social lives and relationships of children and their families. It can negatively impact children, potentially causing shyness, lower self-confidence, social isolation, sleep disturbances, reduced academic performance and increased worries and anxiety for both the child and their mothers (Sirimongkolchaiyakul et al., 2025).

Mothers are have central role to successfully addressing NE in children. Their understanding of the issue is the bedrock upon which effective management strategies are built. By actively taking responsibility for guiding their child, mothers empower them to develop nighttime dryness. As the primary caregivers, mothers are uniquely positioned to implement consistent routines, offer crucial emotional support, and reinforce positive progress. Their engagement and dedication are powerful factors in helping their child gain control and confidence in achieving dryness. Mothers must possess sufficient knowledge, basic skills, and effective coping strategies to address the challenges their children face with NE (El kersh et al., 2022).

### Part (I): Demographic characteristics of studied mothers and their children:

As regard to mother's age, the results of the current study demonstrated that, more than two fifths of studied mothers were ages ranged from 25 - < 35 years (Mean  $\pm$  SD 34.93 $\pm$ 6.54). These results approved with study performed by Çaran et al., (2024), whose conduct study in İstanbul, Turkey (n =58) and entitled as " The effects of maternal depression on children with primary monosymptomatic nocturnal enuresis" who stated that, 41 % of studied mothers were ages ranged from 25 - < 35 (Mean  $\pm$  SD 33 $\pm$ 6.5 ) years. Related to mother's educational level, the results of the current study revealed that, more than two fifths of studied mothers had secondary education. These results matched with study performed by Mohamed et al., (2025), whose conduct study in Egypt (n=60 mothers) and entitled as " Designed Nursing Program on Mothers' Knowledge, Practices and its effect on their Children with Nocturnal Enuresis" who found that, 43.3% of studied mothers had secondary education.

As regard to mother's occupation of the studied children, the results of the current study detected that, half of studied mothers were housewives. These results agreed with study performed by Quiroz-Guerrero et al., (2022), whose conduct study in Mexico (n = 50) and entitled as " Maternal anxiety associated with nocturnal childhood enuresis " who reported that, 52 % of studied mothers were housewives. Concerning to place of residence, the results of the current study showed that, approximately three quarters of studied mothers were lived in rural area. These results agreed with study performed by Salem et al., (2024), whose conduct study in Benha, Egypt (n =75) and entitled as " Prevalence and quality of life among children with mono symptomatic nocturnal enuresis at Benha City, Egypt" who found that, 72 % of studied participants were live in the rural areas.

Related to the monthly income, the results of the current study showed that, half of studied mothers had not enough income per month. These results disagreed with study performed by Yazilitaş et al., (2023), whose conduct study in Ankara, Turkey (n =80) and entitled as " Anxiety and depression in children with primary monosymptomatic nocturnal enuresis and their mothers "who found that, 61.5% of studied mothers had sufficient incomes per month.

As regard to age of the studied children, the results of the current study showed that, more than three quarters of studied children in the age group 6 - <9 years old. These results was in agreement with study performed by **Khadke et al., (2023)**, whose conduct study in India (n = 44) and entitled as " Prevalence of nocturnal enuresis among children aged 5 to 10 years " who reported that, majority (84 %) of studied children were from the age between 6 to 9 years. Regarding to gender of the studied children, the results of the current study showed that, more than two thirds of studied children were male. These results was in agreement with study performed by **Alamri et al., (2024)**, who conduct study in Aseer region, Saudi Arabia (n = 555 children ) and entitled as "Prevalence of nocturnal enuresis among children of Aseer region in Saudi Arabia " who found that, 67 % of studied children were male.

As related to child's order in the family, the results of the current study found that, more than one third of studied children were the first child in the family. These findings were in the same line with study performed by **Munawar & Yousaf, (2022)**, whose conduct study in Pakistan (n= 80) and entitled as " Effect of maternal tolerance on behavioral problems in children with enuresis" who reported that, 38.8% of studied children were the first born child .

#### **Mothers' knowledge regarding nocturnal enuresis:**

Related to total mothers' knowledge regarding NE, the finding of the current study revealed that, more than two thirds of the studied mothers had poor level of total knowledge about nocturnal enuresis. These results was in disagreement with study done by **Alarfaj et al., (2024)**, whose conduct study in Saudi Arabia (n = 616) and entitled as " Parental perception of nocturnal enuresis in a local region of Saudi Arabia "who stated that, 70% of studied mothers demonstrated a good total knowledge about NE. On the other hand, these results supported with study performed by **El kersh et al., (2022)**, who studied " Effect of implementing learning package on controlling nocturnal enuresis for children and their mothers" in Egypt (n =60) who noticed that all of mothers had poor knowledge before the learning package regarding NE.

#### **Mothers' attitude toward nocturnal enuresis:**

Related to total mothers' attitude regarding nocturnal enuresis, the finding of the current study revealed that, more than half of the studied mothers had negative attitude regarding nocturnal enuresis. This result was in harmony with study done by **Khadke et al., (2024)**, whose conduct study in India (n= 226) and entitled as " A Descriptive Study to Assess the Awareness and Attitude of Parents Regarding Nocturnal Enuresis Among Children" who mentioned that, 61.5 % of studied parents had negative attitude regarding nocturnal enuresis. On the other hand, these results was in disagreement with study performed by **Chavadannavar, (2023)**, whose conduct study in India (n= 100 mothers) and entitled as " Knowledge and attitude of mothers regarding nocturnal enuresis and its management among primary school children" who found that, 91 % of studied mothers had total neutral attitude scores regarding nocturnal enuresis and its management.

#### **Mothers' reported practices regarding nocturnal enuresis:**

Concerning to total mothers' reported practices regarding NE, the results of the current study showed that, three fifths of the studied mothers had unsatisfactory level of total reported practices regarding NE. These findings were in the same line with study done by **Mohamed et al., (2025)**, who studied "Designed nursing program on mothers' knowledge, practices and its effect on their children with nocturnal enuresis" in Egypt, who reported that, majority of studied mothers had unsatisfactory total self-reported practice regarding nocturnal enuresis during assessment phase.

#### **Relations between the studied variables:**

Relating to relations between demographic characteristics of the studied mothers and their total knowledge scores regarding NE, the present study presented that, there was highly statistically significant relation between total mothers' knowledge and their occupation at ( $P = < 0.01$ ). Also, there was a statistically significant relation with their age, and educational level at ( $P = < 0.05$ ). While there was no statistically significant relation with their place of residence and monthly income at ( $P = > 0.05$ ). This finding was in disagreement with study performed by **Albadrani et al., (2024)**, who studied "Knowledge and awareness of adults towards nocturnal enuresis in children among the medina population" in Al-Madinah, Saudi Arabia, who stated that, there was a significant relation between educational level of parent and there was no significant relation between the knowledge scores and age, and place of residence.

Concerning to relations between demographic characteristics of the studied mothers and their total attitude scores regarding NE, the current study revealed that, there was statistically significant relation between total mothers' attitude and

their age, educational level and occupation at ( $P = < 0.05$ ). While there was no statistically significant relation with their place of residence and monthly income at ( $P = > 0.05$ ). These findings were in disagreement with study performed by **Chavadannavar, (2023)**, who mentioned that, there was no statistically significant relation between demographic characteristics of the studied mothers and their total attitude regarding nocturnal enuresis.

Regarding to relations between demographic characteristics of the studied mothers and their total reported practices regarding NE, the current study demonstrated that, there was statistically significant relation between total mothers' reported practices and their age, and educational level at ( $P = < 0.05$ ). While there was no statistically significant relation between total mothers reported practices with their occupation, place of residence and income at ( $P = > 0.05$ ). These findings reinforced with study performed by **Mohamed et al., (2025)**, who reported that, there was no statistically significant differences between the total self-reported practice level of the studied mothers and their place of residence and family income and on the other hand there was statistically significant differences between the total self-reported practice level of the studied mothers and occupation.

### Correlation between the studied variables:

As regard to correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding NE, the present study shown that, there was high significant statistical positive correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding nocturnal enuresis. These findings were consistent with study performed by **Chavadannavar, (2023)**, who mentioned that, there was a positive correlation between the total knowledge scores of the studied mothers and their total practices regarding NE. In addition to, these findings supported with study performed by **Mohamed et al., (2025)**, who stated that there was positive association between the total knowledge scores of the studied mothers and their total practices regarding NE.

### Conclusion

Based on the findings of the present study and responses of the study questions, it could be inferred that, there were more than two thirds of the studied mothers had poor level of total knowledge about NE, more than half of the studied mothers had negative attitude regarding NE and three fifths of the studied mothers had unsatisfactory level of total reported practices regarding NE. There was highly statistically significant relation between total mothers' knowledge and their occupation at ( $P = < 0.01$ ). Also, there was a statistically significant relation with their age, and educational level at ( $P = < 0.05$ ). Also, there was statistically significant relation between total mothers' attitude and their age, educational level and occupation at ( $P = < 0.05$ ). In addition to, there was statistically significant relation between total mothers' reported practices and their age, and educational level at ( $P = < 0.05$ ). The present study shown that, there was high significant statistical positive correlation between total mothers' knowledge score, total attitude score and total reported practices score regarding nocturnal enuresis.

### Recommendations

- ❖ Implementation of health education program for mothers regarding management of nocturnal enuresis is essential.
- ❖ Disseminating health education booklets to increase mother's awareness regarding nocturnal enuresis at outpatient clinics is recommended.
- ❖ Encourage mothers to seek medical advice for the problem of nocturnal enuresis among their children.
- ❖ Further researcher on a larger sample size and other setting is recommended for generalization.

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