

Knowledge and awareness of community about pediatric nocturnal enuresis in Taif city, 2019

Maryam S. Al-Jaid (1)
 Norah M. Alotaibi (2)
 Hanaa A. Alrbeeai (2)
 Hind A. Al humayani (2)
 Najmah A. Alotaibi (2)
 Amjaad F. Algethami (2)
 Nada E. Algethami (3)

(1) Lecturer, Taif university, Taif, KSA. Consultant pediatrics, Children Hospital

(2) Medical intern, Taif governmental hospitals, Saudi Arabia

(3) Medical student, College of Medicine, Taif university, Saudi Arabia

Corresponding author:

Maryam S. Al-Jaid

Lecturer, Taif university, Consultant pediatrics, Children Hospital

Alsalama street, Taif city,

Saudi Arabia

Tel.: 0506724855

Email: marayem333@hotmail.com

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Abstract

Background: Nocturnal enuresis (NE) is a health issue suffered in childhood. There is a lack in parents knowledge of the effective treatments and causes for NE.

Objectives: The aim of the present study was to determine the population's knowledge and awareness about pediatric nocturnal enuresis in Taif city.

Methods: A cross-sectional design was done on 301 participants from the adult population of Taif city, of both genders, Saudis and non Saudis, of all educational levels and marital status. A self-administered questionnaire was distributed via social media to subjects who live in Taif city and who agreed to participate in the study.

Result: The majority of the respondents (90.1%) were females and 76.7% reported that they had education at university level. The participants with higher educational qualification had a significantly higher percentage of prior knowledge about enuresis than those with lower educational qualification. The majority of the participants (61.8%) didn't have any idea regarding the different types of enuresis.

Conclusion: Study findings reveal even though nocturnal enuresis is a commonly reported childhood problem, the knowledge regarding its causes and effective management is still lacking in the parents who participated in our study.

Key words : Knowledge, community, pediatric, nocturnal, enuresis, Taif

Abbreviations:

NE Nocturnal Enuresis
 PNE Primary Nocturnal Enuresis

MNE Monosymptomatic Nocturnal Enuresis
 KSA Kingdom of Saudi Arabia

Introduction

Nocturnal enuresis (NE) is a health issue suffered in childhood [1]. It is known as an uncontrollable voiding of urine during sleep time with repetitive episodes of 2 times a week minimally in the pediatric population above 5 years old, without congenital or acquired abnormalities of the nervous system [1]. There are two main types of enuresis in children; primary enuresis is defined as when a child has never achieved bladder control. The secondary enuresis is when a child has achieved bladder control for six months duration, then regresses and starts wetting [2].

The major pathophysiological mechanisms of primary nocturnal enuresis (PNE) consist of decreased functional bladder capacity, raised night-time urine secretion (reduction in antidiuretic hormone secretion), and also fails to suppress bladder emptying due to lack of arousal from sleep [3]. The secondary nocturnal Enuresis is associated with other causes like organic or psychological causes [3].

Some studies that focus on nocturnal enuresis showed large differences in prevalence even within countries in the same geographic region, and considered it as a global problem [2]. The prevalence of enuresis was found to be high in studies done in Africa and India [4,5].

In the Kingdom of Saudi Arabia (KSA), a study done in 2013 found that the prevalence of NE was 28.6%, with a predominance of girls, and the prevalence decreased with increasing age [1]. Another recent study done in 2019 found that 76.4% of school-age children had NE [6].

Studies have found that 50% of parents with children who have MNE were unaware that there are specific treatments available for MNE and only 24.11% of the parents had taken their child to a doctor for this problem [7,8].

As a result of PNE, it has a lower quality of life of affected children; other children also express distress through lower self-esteem, and lower performance in schools [9,10].

To establish diagnosis with nocturnal enuresis, a patient must be aged at least 5 years old or have a catch-up development age of 5 years. Beneath this age, issues with bladder control are believed to be normal [11,12].

There is a lack in parents' knowledge of the effective treatments and causes for NE. Around 60% would seek medical care and around 30% had awareness about effective treatments [13,14,15].

Careful literature research has found that no study was done in KSA to assess the population's knowledge about NE. The aim of this study was to estimate the population's knowledge, awareness and attitude towards nocturnal enuresis in Taif city which will limit excessive stress and anxiety associated with misinformation, and also for parents to have reasonable, proper behavior when they face this health problem.

Subjects and methods

Study design and time frame: This study was a cross-sectional observational descriptive study that was conducted during the period from October to January 2018.

Study setting: The study was conducted in Taif City, Saudi Arabia

Sampling methodology: Adult population of Taif city of both genders, including Saudi and non Saudis population, of all educational levels and marital status constituted the target population of this study.

Inclusion criteria: The study population consisted of the following: Adult population aged between (18- 65) years old, who were living in Taif city and accepted to participate in our study.

Exclusion criteria:

- 1- People who refused to participate in the study.
- 2- Those whose questionnaires were incomplete.
- 3- Adults who lived outside Taif city.
- 4- Population group aged less than 18 or more than 65 years old

Sample size: Sample size (n) = 301 participants were included in this study.

Study instrument: The researchers were responsible for distribution of electronic questionnaires to the population, both male and female, via social media. A pre-designed Arabic self-administered questionnaire was introduced online to both males and females of the Taif city population. This questionnaire had the following items :

- 1- Demographic data including: Gender, Age, Educational level, Social status and the presence of children.
- 2- A group of questions to evaluate the subjects' knowledge's about NE; including: evaluation of prior knowledge of nocturnal enuresis in children , the causes of NE, age of children in which to consider NE, number of times of urinating at night to diagnose NE, types of NE, when to consider medical advice, methods to manage NE and psychological effects of NE on children.

Ethical considerations: This study was approved by the research ethic committee of Taif University. All participants responded online and were informed that their information would be confidential.

Data analysis: Collected data were coded, verified and analyzed with the help of a biostatistician using Statistical Package for the Social Sciences (SPSS) program version 20 developed by International Business Machines (IBM®) Corporation. Qualitative data was presented as number and percentage and Chi Squared test was performed to assess the relationship between variables. A p-value of less than 0.05 was considered as statistically significant.

Results

The results of the study showed that the majority of the respondents were females and 90.1%, 62.5% were in the age group of 18-30 years, 32.6% (98) in the age group of 30-45 years and the remaining 5%(15) were in the 45-60 years category (Table 1).

When the respondents' highest educational qualifications were recorded, the majority of the participants 76.7% (231) reported that they had education at university level, whereas 18.3 % had qualification at high school level and 4% (12) had only Secondary education. Three of the participants (1%) reported that they were illiterate or had no secondary education (Table 1). The participants with higher educational qualifications had a significantly higher percent of those with prior knowledge about enuresis than those with lower educational qualification ($p < 0.05$) (Table 2). When the opinion regarding the cause of enuresis in children was enquired about, 17.3% of the participants mentioned that the causes are psychological and social causes, while the majority of the participants 63.8% had the opinion that enuresis is a result of multiple factors or causes (Table 3). When the participants were asked about the age at which children most commonly encounter enuresis, 53.2% (160) had the opinion that it is 'above 5 years'; 28.2% (85) mentioned it as '5 years', 10.3% (31) reported it as '3-4 years' (Table 3). Most of the participants (40.2%) had the view that children need a certain number of times to urinate at night to consider it as enuresis and the number of times reported differed among the participants. Of the participants, 29.6% (89) reported that children need to urinate at night more than two times in a month to consider it as enuresis, while most of the participants (63.5%) did not have an idea regarding the number of times children need to urinate to consider having enuresis (Table 3).

On asking about the appropriate time to consult a doctor, 23.6% of the participants had the opinion that 'the child should reach the age of five and still suffer from enuresis' to do so, 15.6% had the opinion that they should consult the doctor only if there are 'symptoms of uncontrolled urination during the day or presence of urinary infections'. A few participants (3.7%) believed that they should consult a doctor 'if this problem is absent for a period and then returns again'. Some of them (3.7%) were totally unaware about the time to consult the doctor (Table 3). Most of the participants (61.8%) didn't have any idea regarding the different types of enuresis, and only 27.9% were aware of the different types of enuresis (Table 3).

When participants were asked about the methods or treatment to solve enuresis in children, 80.1% responded they are aware of effective methods of curing enuresis. Most of the participants (70.4%) reported that 'both pharmacological and behavioural treatment' is needed to cure or solve enuresis, 7.6% thought that 'only behavioural treatment' is needed to cure enuresis, and very few participants mentioned that 'only pharmacological treatment' is required (Table 3).

When the participants were asked whether enuresis influences the psychological health of the child, 90.7 % believed that it has an effect. According to 14% of the participants 'shyness and isolation' is the psychological effect, 15.6% believe it as 'low self-esteem' and 4.7% mentioned it as 'aggressiveness' (Table 3).

Table 1: Socio-demographic characteristics of the participants

Variable		Frequency (n)	Percent
Gender	Male	26	9.9 %
	Female	271	90.1 %
Age	18-30	188	62.5%
	30-45	98	32.6%
	45-60	15	5%
Educational level	University	231	76.7%
	High school	55	18.3%
	Secondary	12	4%
	Illiterate	3	1%
Marital status	Single	122	40.5%
	Married	160	53.2%
	Divorced	13	4.3%
	Widowed	6	2 %
Do you have children	Yes	146	48.5%
	Married and No children	36	12%
	Others (Unmarried/ single)	119	39.55

Table 2: Relationship of Education level of parents with prior knowledge of enuresis

Educational level	Do you have any prior knowledge of enuresis in children		Total	Pearson Chi-Square test	p -value
	Yes	No			
University	168	63	231	8.816	0.031
High school	34	21	55		
Secondary	5	7	12		
Illiterate	1	2	3		

Table 3: Knowledge, attitude and opinion of participants related to nocturnal enuresis (Part 1)

Variable		Frequency	Percent
Do you have any prior knowledge of enuresis in children?	Yes	208	69.1%
	No	93	30.9%
In your opinion, what are the causes of enuresis in children?	Organic causes such as (urinary tract infections, small bladder size, diabetes, severe constipation)	18	6%
	Psychological and social causes such as (violence against children, family disintegration)	52	17.3%
	Genetic factors	6	2%
	Frequent fluid consumption	28	9.3%
	Deep sleep	5	1.7%
	Multiple causes	192	63.8%
	Others	19	6.3%
At what age can the child be considered to have enuresis?	3-4years.	31	10.3%
	5 years	85	28.2%
	More than 5 years	160	53.2%
	Others	25	8.3%
Does the patient need a certain number of times to urinate at night to be considered to have enuresis?	Yes	121	40.19%
	No	91	30.23%
	I do not know	86	28.57%
	Other	3	0.01%
If the answer of previous question is yes, how many times should the urination to recur in the child?	Once a month	7	2.3%
	Twice a month	14	4.7%
	More than twice a month	89	29.6%
	Other	191	63.5%
Are you aware of the types of enuresis?	Yes	83	27.9%
	No	28	9.3%
	I don't know	186	61.8%

Table 3: Knowledge, attitude and opinion of participants related to nocturnal enuresis (Part 2)

In your opinion, are there any effective methods to solve the problem of enuresis?	Yes	271	80.1
	No	7	2.3
	I don't know	53	17.6
If the answer is yes, what is the nature of these solutions?	Only Pharmacological treatment	7	2.3%
	Only behavioural treatment	23	7.6%
	Pharmacological and behavioural treatment	212	70.4%%
	Don't match	59	19.6%
In your opinion, what are the psychological treatment methods for nocturnal enuresis?	Use timer connected to bed	9	3%
	Teach child urination control for increased bladder capacity	14	4.9%
	Restrict fluids before bed time	27	9%
	Psychological support	34	11.9%
	Others	217	72.1%
Do you think that enuresis has effects on the psychological health of the child?	Yes	273	90.7
	No	25	8.3
	Others	3	1
If previous question was answered yes, what are the psychological effect of nocturnal enuresis?	Shyness and isolation	42	14
	Low self esteem	47	15.6
	Aggressiveness	14	4.7
	Other	173	57.5
	No answer	25	8.3
In your opinion when should you consult a doctor when he/she has enuresis?	If the child reaches the age of five and still suffers from enuresis	71	23.6%
	If there are symptoms of uncontrolled urination during the day or presence of urinary infections	47	15.6%
	If this problem is absent for a period of time and then returns again	11	3.7%
	As soon as the child urinates in their bed at any age	13	4.3%
	I don't know	11	3.7%
	More than one option	148	49.2%

Discussion

The study findings revealed that 69.1% of the participants were aware about enuresis in children. The reported unawareness may be because; their children might have never encountered enuresis or can also be due to lack of knowledge regarding the same.

The opinions regarding the causes of enuresis were different among the participants, as 17.3% of them believed that emotional or psychological causes such as violence, and family disintegration could lead to nocturnal enuresis in children. Only 1.7% of the participants reported that 'deep sleep' is the cause of enuresis in children. These findings are similar to other studies done by Haque M et al [7] and Shelov SP [8].

The developmental delay of antidiuretic hormone production at night, delay of appropriate arousal threshold in children and nocturnal detrusor hyperactivity are currently considered to be the primary causes of monosymptomatic nocturnal enuresis [16,17,18,19,20].

The majority of the participants (53.2%) believed that a child needs to be above 5 years to consider this as nocturnal enuresis. The attainment of bladder control is considered to be a milestone in child development and this could mark the end of toilet training in them. According to Campbell (1970), a child achieves the control of the bladder movement between 3-4 years [13]. Epidemiological surveys in other countries reported a prevalence of 13-19% at 5 years old and 1-2% at 6 years old in boys, while the prevalence was 9-16% at 5 years and 1-2% in girls [21]. As the age increases, bedwetting becomes more socially unacceptable and children sometimes feel shy to report the situation maybe because parents may respond intolerantly and be frustrated by this [22,23].

In our study, only 27.9% of the parents reported that they are aware of the types of nocturnal enuresis. Nocturnal enuresis is divided into primary and secondary forms [24]. The primary form is when enuresis is present in a child of age ≥ 5 years old who has never achieved an asymptomatic period (≥ 6 months) of consistent night time dryness and the secondary form when enuresis is present in a child ≥ 5 years old who has achieved an asymptomatic period (≥ 6 months) of consistent nighttime dryness in the past [25].

In our study, 70.4% of the participants believed that a child requires a combination of both pharmacological and behavioural treatment to effectively manage enuresis. In one of the studies, it was reported that parents use strategies like lifting (or waking) during sleep and restricting drinks before bedtime to reduce the night bedwetting in children [26].

The education of both the child and the parent should be the first line of treatment of NE before giving pharmacological interventions. Education is provided on normal bladder function, normal voiding habits, how the child differs from normal, and how to change voiding behaviour [10].

Motivational therapy (positive reinforcement) is also found to be effective in the management of NE [27]. Punishment is not an acceptable method to manage this condition, and can become counterproductive by enhancing stress-related accidents [28]. Some authors suggest using alarms if behavioural and motivational therapy is ineffective after 6 weeks [29].

A combination of Desmopressin and alarm has been suggested as effective treatment for children with primary NE [16]. Oxybutynin, an anticholinergic medication and Desmopressin have been suggested for children with severe symptoms [30].

Limitations

A limitation of the present work was the small sample size. Being an online survey made the generalization of results very difficult.

Conclusion

Study findings reveal that even though nocturnal enuresis is a commonly reported childhood problem, the knowledge regarding its causes and effective management is still lacking in parents who participated in our study.

Competing interests: The authors declare that they have no competing interests

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