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Association of Nocturnal Enuresis and history of Breastfeeding in primary school children in Hilla city

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Abstract--Background : Nocturnal Enuresis is a common problem in children. It has significant psychological impacts on both children and families. Nocturnal enuresis refers to an inability to hold urine during sleep at night. It is essential problem for school age children
Objectives: To identify whether history of breastfeeding has a positive relation with reduced rates of bedwetting bed wetting at school age and to identify characteristics of breastfeeding that correlate with bedwetting or otherwise. Patients and methods: It is a descriptive hospital based cross_ sectional study which was carried out on convenient sample of 200 child with nocturnal enuresis aged 6 -12 years who attended Pediatric consultant clinic of Babylon Maternity and Pediatric Hospital, Imam Al-Sadiq General Teaching Hospital and Al Noor Pediatric Hospital , Urology consultant clinic of Hilla General Teaching Hospital and Imam Al-Sadiq General Teaching Hospital , whose mother accepted to participate in this study . It was conducted over a period of three months beginning from first of February to first of May 2022. Result: A total of 200 children with nocturnal enuresis were enrolled in this study, with mean $\pm$ SD of age was 8.3 ± 2 years, ranging between 6 to 12 years. With male to female ratio was 1.17: 1. History of breast feeding of studied children shown that (46.5%) of children had exclusive breast feeding, with duration of exclusive breast feeding less than 6 months was found in (76%) of children and total duration of breast feeding was more than 2 years in 8%of children. Conclusion: This study confirmed various risk factors for nocturnal enuresis in addition to breastfeeding as a risk factor. Male (gender), family history , low educational level of parents , low

socioeconomic status , irregular sleep, unemployment of mother and nuclear family were related to incidence of enuresis.

Keywords---Association ,Nocturnal Enuresis , Breastfeeding , Hilla.

Introduction

Enuresis is a prevalent childhood behavioral disorder that affects many children throughout the world. Involuntary wetting is classified into two categories by International Children's Continence Society (ICCS) to be diagnosed with enuresis (nocturnal enuresis), a child must be 5 years old and experience nighttime wetting at least once a week for at least three months. Another is urinary incontinence during the day, which is defined as daytime wetting at least once per two weeks (1) The Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) defines enuresis as the repeated voiding of urine into child's bed or clothes at least twice a week for at least 3 consecutive months in a child who is at least five years of age (2).

Enuresis can also be categorized as monosymptomatic (MNE) or non-monosymptomatic (NMNE), the latter of which is connected to daytime incontinence or other lower urinary tract symptoms including urgency. Additionally, an enuretic episode is considered common if it happens four or more times each week (3).

Enuresis affects children commonly all over the world. There are many misconceptions between patients and parents, and parents of children with enuresis experience a wide variety of emotions. Some parents delay seeking medical care because they fear being stigmatized (4). Bedwetting has a considerable impact on children and their families, notably on mental health, sense of worth, interpersonal connections, and socialization (1).

Nocturnal Enuresis (NE) indicates voiding when sleeping, Diurnal enuresis, on the other hand, refers to wetness when awake, Primary enuresis in children who have never experienced dryness may be nocturnal or diurnal, whereas secondary type may be seen in children who have been dry for at least six months (2). About 90% of patients had primary enuresis as their underlying etiology. Most children between the ages of 5 and 8 are affected by secondary enuresis, and it is more prevalent in late school children (5).Nocturnal enuresis affects a lot of school-age children . In a few studies, the overall prevalence rate was reported to be 5%–20%. In Saudi Arabia, the prevalence was found to be 15%(2).

In the United States, 6 million children are anticipated to wet their beds each year. Affected children range in age from five to thirteen, with 15% of five-year-olds, 5% of ten-year-olds, and 1% of thirteen-year-olds suffering from the condition. On the other hand, 1% of these patients are treatment-resistant (6).

By the time they are five, 80–85 %of children are continent at night and 90–95% of children are virtually entirely continent during the day(7)

According to estimates, the prevalence of nocturnal and daytime enuresis in Iraqi children was 22 percent and 1.9 percent, respectively (Tikrit and Beji cities) Only 15% of children have spontaneous resolution rates of around 15% every year by the age of 15, meaning that only 1% of adolescents have NE issues by this age (8).

According to the results of various studies, enuresis can be brought on by a range of causes, such as variations in a child's urinary sphincter development, diabetes, urinary tract infections, emotional shifts and stressful educational conditions, parental separation, and family issues. Secondary enuresis can also be caused by urological or neurological issues, such as spinal cord diseases and repeated urinary tract infections (9). Primary enuresis has been linked to a number of factors that including a family history of the condition, poor toilet training, nursing history, and a child's psychological state. According to studies, men and those from lower socioeconomic origins are more likely than women to bed wet, and the probability of having enuresis diminishes with age (10)(11). Developmental delays, immature sleep patterns, immature bladder function, or a deficiency in nocturnal antidiuretic hormone are all potential causes of enuresis (bedwetting). Enuresis is characterized by a complex interaction of genetic and environmental risk factors(12). Since developmental delays are more prevalent in younger children, all of these enuresis causes are linked to them. In infants and younger children, bedwetting is also accepted as normal (6).

Breastfeeding promotes children's brain maturity and cognitive skills, according to several studies. Breast milk contains the nutrients essential for the immature brain's faster and better development, which explains the association between breastfeeding and cognitive maturity. Arachidonic acid and docosahexaenoic acid are long-chain polyunsaturated fatty acids are essential constituent of the phospholipid of the CNS cell membrane and are basic lipids for the human brain. We're looking at the association between breastfeeding and bedwetting and early childhood neurodevelopment. Breast milk helps children develop their sensory and cognitive skills while also protecting them against infectious and chronic diseases. World Health Organization (WHO) demonstrates that one of the most successful treatments for enhancing children's health is establishing best feeding strategies for infants and children (11)(13). Even though the connection between enuresis and breastfeeding has not yet been sufficiently proven in the literature, it is believed to exist because both are vital to a child's growth(11).

Patients and methodology

A cross-sectional study was conducted at the Pediatric consultant clinic of Babylon Maternity and Pediatric Hospital, Imam Al-Sadiq Hospital and Al Noor Pediatric Hospital, the Urology consultant clinic of Hilla General Teaching Hospital, and Imam Al Sadiq General Teaching Hospital. The time of this study was over a period of 3 months beginning from the first of February to the first of May 2022. This study included a convenient sample of 200 children with nocturnal enuresis aged 6 -12 years who attended hospitals of Hilla city mentioned above whose parents agreed to participate in this study. This study included (6-12) years old children in Hilla city, All children with a history of Nocturnal enuresis and both genders. School children who reside outside Hilla city was excluded .Data was collected by using a predesigned questionnaire by

which the mothers were interviewed after giving their verbal consent. (mothers who refused to participate were excluded). The questionnaire included Sociodemographic factors of mother and child ,history of breastfeeding and history of enuresis . Analysis of data was done utilizing SPSS version 25 computer software (statistical package of social science In order to show the association between categorical variables, the chi-square test was used. Continuous variables were given as mean and standard deviation, whereas categorical variables were shown as numbers and percentages. P value of <0.05 was considered as statistically significant.

Ethical approval: The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with patients verbal and analytical approval before sample was taken. The study protocol and the subject information and consent form were reviewed and approved by a local ethics committee according to the document number 56 (including the number and the date in 26/4/2022) to get this approval. This study was approved by the scientific committee of family and community medicine department college of medicine/Babylon university. Verbal consent will take from every patient before data collection.

Results

A total of 200 children with nocturnal enuresis were enrolled in this study, with mean $\pm$ SD of age was 8.3 ± 2 years, ranging between 6 to 12 years. With male to female ratio was 1.17: 1 (table 4-1).

Table 4-1 Sociodemographic character of studied children.

Sociodemographic character		Number	Percentage
Age	≤ 8 years	112	56%
	9-10 years	51	25.5%
	11-12 years	37	18.5%
	Total	200	100%
Gender	Male	108	54%
	Female	92	46%
	Total	200	100%
Child order	First	69	34.5%
	Second	60	30%
	Third and more	71	35.5%
	Total	200	100%
Residency	Rural	44	22%
	Urban	156	78%
	Total	200	100%
No. of birth	Single	185	92.5%
	Twin	15	7.5%
	Total	200	100%

Figure (4-1) history of toilet training was occurring in 65%(130) of children other 35%(70) of children had no toilet training. Past history of studied children shown

that 40% (80) of children had negative family history of enuresis, 72%(144) of children had negative medical history, 95%(190) of children had negative surgical history and 64%(128) of children had irregular sleeping history, table 4-2

Table 4-2 Past history of studied children.

Past history		Number	Percentage
Past medical history	Negative	144	72%
	UTI	19	9.5%
	DM	5	2.5%
	Respiratory	4	2%
	Seizure	2	1%
	Others	26	13%
	Total	200	100%
Past surgical history	Present	10	5%
	Negative	190	95%
	Total	200	100%

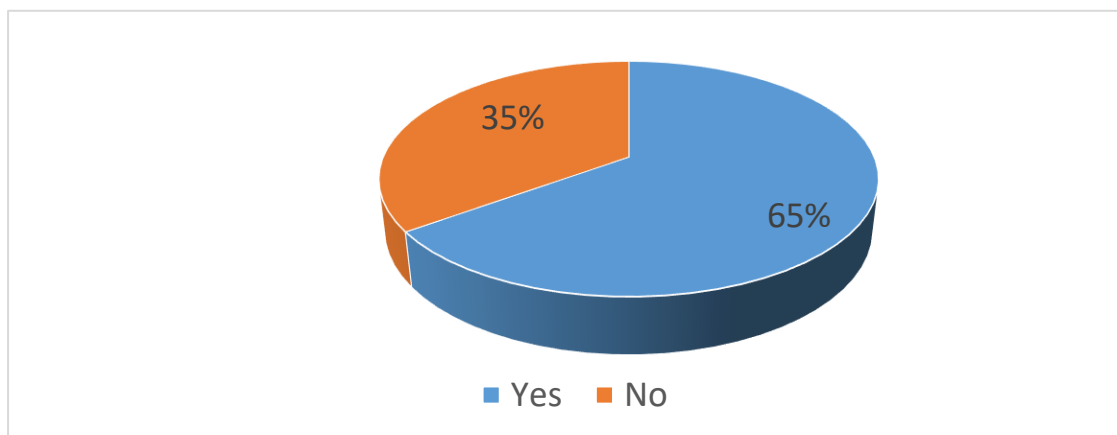


Figure 4-1 History of toilet training.

Primary enuresis was found in 84%(168) of children, with daily enuresis occur in 38.5%(77) of children. Nocturnal enuresis was a character in 93.5%(187) of children, while diurnal enuresis was character in 6.5%(13) of children. Associated encopresis was found in 14.5%(29) of children (table 4-3).

Table 4-3 Enuresis and Encopresis character of children.

Enuresis and Encopresis character		Number	Percentage
Type of enuresis	Primary	168	84%
	Secondary	32	16%
	Total	200	100%
Frequency of enuresis	Daily	77	38.5%
	2-3 times /week	82	41%
	Occasionally	41	20.5%

	Total	200	100%
Time of enuresis	Nocturnal	187	93.5%
	Diurnal	13	6.5%
	Total	200	100%
Associated encopresis	Yes	29	14.5%
	No	171	85.5%
	Total	200	100%
Frequency of encopresis	Daily	1	3.4%
	2-3 times/ week	4	13.8%
	Occasionally	24	82.8%
	Total	29	100%
Family history of enuresis	Sibling	37	18.5%
	Parents	61	30.5%
	Both	22	11%
	None	80	40%
	Total	200	100%

History of breast feeding of studied children shown that 46.5% (93) of children had exclusive breast feeding, with duration of exclusive breast feeding more than 6 months was found in 24%(48) of children and total duration of breast feeding was more than 2 years in 8%(16) of children, table 4-4.

Table 4-4 History of breast feeding.

History of breast feeding		Number	Percentage
Childhood feeding	Exclusive breast feeding	93	46.5%
	Mix feeding	62	31%
	Bottle feeding	45	22.5%
	Total	200	100%
Duration of exclusive breast feeding	Less than or equal to 6 months	152	76%
	More than 6 months	48	24%
	Total	200	100%
Duration of breast feeding	Less than 6 months	59	29.5%
	6-12 months	33	16.5%
	1 -2 years	92	46%
	>2 years	16	8%
	Total	200	100%

Sociodemographic character of parents was shown in table 4-5 and the school history of studied children shown that: the performance was good in 70% of children, punishment and or abuse was found in 32.5% of children and learning problem associated with ADHD was found in 12% of children.

Table 4-5 Sociodemographic character of parents.

Sociodemographic character of parents.		Number	Percentage
Marital status	Married	178	89%
	Divorce	9	4.5%
	Widow	9	4.5%
	Separated	4	2%
	Total	200	100%
Household Income	<600.000IQD	103	51.5%
	600.000-1.000.000 IQD	68	34%
	>1.000.000 IQD	29	14.5%
	Total	200	100%
No. of child household	<3	50	25%
	≥3	150	75%
	Total	200	100%
Living in extending family	Yes	85	42.5%
	No	115	57.5%
	Total	200	100%
Current children living	Parents	169	84.5%
	Grandparents	29	14.5%
	Others	2	1%
	Total	200	100%
Mother education	Illiterate	7	3.5%
	Primary	134	67%
	Secondary	31	15.5%
	High education	28	14%
	Total	200	100%
Paternal education	Illiterate	2	1%
	Primary	109	54.5%
	Secondary	42	21%
	High education	47	23.5%
	Total	200	100%
Mother occupation	Employed	39	19.5%
	Non	161	80.5%
	Total	200	100%
Paternal occupation	Employed	104	52%
	Non	96	48%
	Total	200	100%
Paternal drug abuse	Yes	8	4%
	No	192	96%
	Total	200	100%
Paternal smoking history	Smoker	69	34.5%
	Non	131	65.5%
	Total	200	100%
School performance	Good mark	140	70%
	Low mark	60	30%
	Total	200	100%

Punishment and/ or abuse	Yes	65	32.5%
	No	135	67.5%
	Total	200	100%
Learning problem associated with ADHD	Present	24	12%
	Absence	176	88%
	Total	200	100%
Sleep history	Regular	72	36%
	Irregular	128	64%
	Total	200	100%

Only number of birth from children Sociodemographic character shown a significant association with children feeding ($p=0.032$), table 4-6.

Table 4-6 Relation of Sociodemographic character of children and feeding.

Sociodemographic character		Children feeding		Chi-square	P value
		Exclusive breast feeding	Mix and bottle feeding		
Age	≤ 8 years	47(50.5%)	65(60.7%)	2.44	0.29*
	9-10 years	28(30.1%)	23(21.5%)		
	11-12 years	18(19.4%)	19(17.8%)		
	Total	93(100%)	107(100%)		
Gender	Male	57(61.3%)	51(47.7%)	3.71	0.054*
	Female	36(38.7%)	56(52.3%)		
	Total	93(100%)	107(100%)		
Residency	Rural	17(18.3%)	27(25.2%)	1.402	0.23*
	Urban	76(81.7%)	80(74.8%)		
	Total	93(100%)	107(100%)		
Child order	First	35(37.6%)	34(31.8%)	0.77	0.67*
	Second	27(29%)	33(30.8%)		
	Third and more	31(33.3%)	40(37.4%)		
	Total	93(100%)	107(100%)		
No. of birth	Single	90(96.8%)	95(88.8%)	4.57	0.032*
	Twin	3(3.2%)	12(11.2%)		
	Total	93(100%)	107(100%)		

*chi-square test, significant ≤ 0.05 .

79.6%(74) of Children with EBF, had toilet training, while only 52.3%(56) of children with mixed or bottle feeding had toilet training, and there were as a significant association between exclusive breast feeding and toilet training ($p<0.001$), table 4-7, figure 4-2.

Table 4-7 Relation between type of feeding and toilet training.

Variable		Children feeding		Chi-square	P value
		Exclusive breast feeding	Mix and bottle feeding		
Toilet training	Yes	74(79.6%)	56(52.3%)	16.22	<0.001*
	No	19(20.4%)	51(47.7%)		
Total		93(100%)	107(100%)		

*chi-square test, significant ≤ 0.05 .

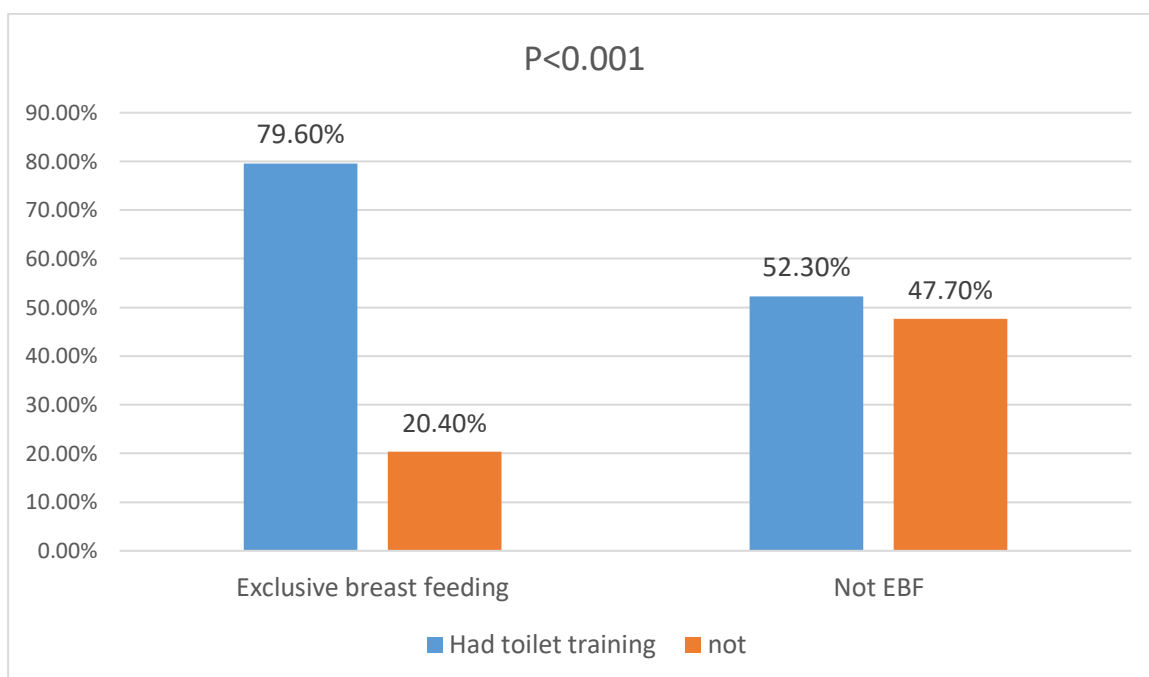


Figure 4-2 Relation between type of feeding and toilet training.

The Sociodemographic character of parent that shown a significant association with children feeding was marital status, number of children household, current children livening and paternal education with p value 0.018, 0.032, 0.012 and 0.01 respectively. Other shown no significant association ($p > 0.05$), table 4-8.

Table 4-8 Relation of Sociodemographic character of parents and type of feeding.

Sociodemographic character of parents.		Children feeding		Chi-square	P value
		Exclusive breast feeding	Mix and bottle feeding		
Marital status	Married	88(94.6%)	90(84.1%)	5.61	0.018*
	Divorce &	5(5.4%)	17(15.9%)		
	Widow				

	&Separated				
	Total	93(100%)	107(100%)		
Household Income	<600.000IQD	49(52.7%)	54(50.5%)	0.103	0.95*
	600.000-1.000.000 IQD	31(33.3%)	37(34.6%)		
	>1.000.000 IQD	13(14%)	16(15%)		
	Total	93(100%)	107(100%)		
No. of child household	<3	19(20.4%)	31(29%)	4.57	0.032*
	≥3	74(79.6%)	76(71%)		
	Total	93(100%)	107(100%)		
Living in extending family	Yes	33(35.5%)	52(48.6%)	1.93	0.16*
	No	60(64.5%)	55(51.4%)		
	Total	93(100%)	107(100%)		
Current children living	Parents	85(91.4%)	84(78.5%)	6.3	0.012*
	Grandparents & others	8(8.6%)	23(21.5%)		
	Total	93(100%)	107(100%)		
Mother education	Illiterate	2(2.2%)	5(4.5%)	1.38	0.708*
	Primary	64(68.8%)	70(65.4%)		
	Secondary	13(14%)	18(16.8%)		
	High education	14(15.1%)	14(13.1%)		
	Total	93(100%)	107(100%)		
Paternal education	Illiterate	1(1.1%)	1(0.9%)	11.4	0.01*
	Primary	52(55.9%)	57(53.3%)		
	Secondary	11(11.8%)	31(29%)		
	High education	29(31.2%)	18(16.8%)		
	Total	93(100%)	107(100%)		
Mother occupation	Employed	17(18.3%)	22(20.6%)	0.165	0.68*
	Non	76(81.7%)	85(79.4%)		
	Total	93(100%)	107(100%)		
Paternal occupation	Employed	45(48.4%)	59(55.1%)	0.90	0.34*
	Non	48(51.6%)	48(44.9%)		
	Total	93(100%)	107(100%)		
Paternal drug abuse	Yes	2(2.2%)	6(5.6%)	1.54	0.21*
	No	91(97.8%)	101(94.4%)		
	Total	93(100%)	107(100%)		
Paternal smoking history	Smoker	31(33.3%)	38(35.5%)	0.105	0.74*
	Non	62(66.7%)	69(64.5%)		
	Total	93(100%)	107(100%)		
School performance	Good mark	66(71%)	74(69.2%)	0.07	0.78*
	Low mark	27(29%)	33(30.8%)		
	Total	93(100%)	107(100%)		
Punishment and/ or abuse	Yes	30(32.3%)	35(32.7%)	0.005	0.94*
	No	63(67.7%)	72(67.3%)		
	Total	93(100%)	107(100%)		
Learning problem	Present	14(15.1%)	10(9.3%)	1.53	0.21*
	Absence	79(84.9%)	97(90.7%)		

associated with ADHD	Total	93(100%)	107(100%)		
Sleep history	Regular	35(37.6%)	37(34.6%)	0.202*	0.65*
	Irregular	58(62.4%)	70(65.4%)		
	Total				

*chi-square test, significant ≤ 0.05

Discussion

A cross sectional study was performed in Hilla city that included a total of 200 children with nocturnal enuresis . Their mean $\pm$ SD of age was 8.3 ± 2 years, ranging between 6 to 12 years. In the present study , it was found that the prevalence of nocturnal enuresis in males was 54% . This was more than females which was 46% . This is in agreement with other studies (14,15,16). Regarding age , the study found that nocturnal enuresis declines with increasing age so that at age (6-8) years it was 56% , but at age (9-10) years it was 25.5% and at age (11-12) years it was 18.5 % .The findings are in agreement with study by Ali (8) in Iraq and studies in Egypt (17,18) but in contrast with a study by Saudi Arabia research (2) .The later found nocturnal enuresis increasing with increase age Enuretic children in our study tend to live in urban areas (78%) which is in contrast to Hu et al in china (19) .This result may be explained by the fact that enuresis is considered a stigma in rural areas , preventing parents from seeking medical advice . In current study , the enuretic child's birth order shows nearly equal frequency which is in agreement with Saudi research (2) ,but is in contrast with Egyptian study (17) , birth order was a significant determinant of enuresis. Regarding number of births , we found (92.5)% of enuretic children were born as a single child while twins represented about 7.5% .

Toilet training which is defined as an attempt to train children to be able to control urination and defecation and do it in the right place .Toilet training should be carried out when the child is 2 or 3 years old because at this age the spinal and sphincter reflex coordination is maturing (20). History of adequate toilet training was recorded in 65%(130) of enuretic children . The other 35%(70) of children had no toilet training in our study that is in contrast with (20) a study in Indonesia which showed poor toilet training in 65% of enuretic children . Past history of studied children shows that , 60 % (120) of children had positive family history of enuresis which is in agreement with other studies (2,16,20), all of which showed a positive family history and this result as in literature review that is a risk factor for enuresis. Past medical history was negative in 72% of enuretic children in our study and 9.5 % had urinary tract infection. This is similar to a study in Iran (21) that found UTI as a risk facor for enuresis .

Primary enuresis was found in 84%(168) of children so the current study revealed that the frequency of primary enuresis represented the majority of cases and also nocturnal enuresis was the higher frequency (93.5%0(187) of children) , this result is the same in other studies in Saudi and Iraq (2,8,22) .Encopresis , in our study we found to occur in only in 14.5 % of enuretic children had encopresis .This result is in contrast to (17) a research in Egypt which found more frequency of encopresis among enuretic children . Regarding frequency of nocturnal

enuresis we found enuresis (2-3 times / week) was more prevalent ,41 % which is in agreement with a research in Jordan (23) by AL-RASHED et al . In contrast to other studies in Egypt and Iraq showed diurnal enuresis was higher frequency (17,22). In this study the history of adequacy of sleep it found a higher frequency of irregular sleep (64%) 128 of enuretic children which is in agreement with Ferrara et al (24) which also showed a high rates of poor quality of sleep among enuretic children .

Regarding history of breastfeeding ,in our study it was revealed that exclusive breastfeeding (46.5%) of enuretic children while (53.5%) of enuretic children had a history of either (mixed feeding 31% and bottle-feeding 22.5%) which indicates that a history of nonexclusive breast feeding during the first six months of life of children was prevalent in enuretic children. This result was in agreement with other studies (2,14,25,26) . Duration of exclusive breast feeding(Less than or equal to 6 months) was high in enuretic children 152 (76%) . This result was in agreement with (16,20) in Turkey and Indonesia . The total duration of breast feeding was more than 2 years in only 8%(16) of enuretic children. Marital status showed that 89% of parents of enuretic children were married and this had no role in the incidence of enuresis . This is in agreement with (2,22). In contrast to studies (14,21) that found enuresis was more in children of divorced parents . In this current study , it was found that low socioeconomic status was found in 103 (51.5%) of enuretic children and is in agreement with other researches in Egypt and Jordan (17,23) . Regarding number of children in the household showed higher prevalence of enuresis(150 (75%)) if the number of children was equal or was more than 3 . This matches results of a studies in Saudi and Iraq (2,8,22).

In current study ,living in extended families : showed that nuclear family was higher prevalence (57.5%) and current child living with parents showed higher prevalence (169) of enuretic children (84.5 %) lived with their parents in contrast to a study (22) in Iraq which revealed more incidence of enuretic children living in extended families . This result may be explained by the fact that a nuclear family could pay more attention to their children which in turn would lead to more stress and could induce enuresis . Regarding mother's education and father's education the study showed at low educational level that was higher in prevalence in enuretic children . This is in agreement with studies in Iraq and Jordan (8,23,27) but is in contrast to a study (22) in Iraq that showed no role for education level of parents .

Mother occupation in our study showed a higher prevalence of enuretic children of non employed women(80%) , while employed mothers were found to have less enuretic children than housewives and this was thought to be due to the higher educational level of working mothers. This result is in agreement with (17) a study in Egypt and in contrast to other study (22) in Iraq which showed no link between maternal employment and incidence of enuresis . Regarding paternal occupation the study showed near equal rates of enuresis in children of employed (52%) , non-employed (48%) fathers indicating that the employment of fathers was not related to incidence of enuresis as in Iraqi study (22) which showed no role for employment in incidence of enuresis. In our study, school performance was good in 70% of enuretic children which is in agreement with (22)in Iraq . In

contrast to studies in Saudi and India (2,14) which showed poor school performance in enuretic children . This result can be explained that children who had good school performance were exposed to more stress. Abuse and punishment was detected in 32.5 % of enuretic children and it was not related to the incidence of enuresis which is in agreement with (2) a study in Saudi Arabia . Learning problems associated with ADHD was detected in 12 % of enuretic children . ADHD played no role in incidence of enuresis in contrast to (28)) which showed a high prevalence of enuresis in ADHD children .In a study in USA (26) it revealed significant association between ADHD and enuresis .

The implementation of toilet training is very important during children's development because it will shape the personality and discipline of children(20), The current study (79.6%)of enuretic children with exclusive breastfeeding , had adequate toilet training, while 52.3% of children with mixed or bottle feeding had adequate toilet training, and there was as a significant association between exclusive breast feeding and toilet training ($p < 0.001$), in agreement to a study in Indonesia(20) .The study found a significant association between toilet training and enuresis .There was significant association between the number of births and history of breastfeeding of enuretic children. There was no significant association between residency (urban and rural areas) and history of breastfeeding of enuresis children, which might be explained by the fact that the gap between living conditions in urban and rural areas has significantly decreased with economic development in the last years (19).

There was no significant association between age , gender with history of breastfeeding of enuretic children which is in agreement with (30) in Iran , since general continence is clearly associated with developmental maturity , perhaps females mature faster than males .There was no significant association between child order with history of breastfeeding of enuretic children .This is in agreement with (2) in Saudi The difference in study design starting from the definition of the study population, population based or health facility-based, age and age grouping, and gender. This is a methodological issue that must be taken into consideration in comparing results of various studies. The possible Sociodemographic , economic, cultural, and racial and genetic differences between the different populations studied (5).Regarding Sociodemographic character of parents showed that significant association between marital status and history of breastfeeding of enuretic children , in agreement with (14) in lucknow india which found significant association between marital status (single parent) in enuretic children . In contrast to (2) a study in Saudi Arabia which found no significant association of marital status with enuresis . Number of children household showed significant association with history of breastfeeding of enuretic children in contrast to (2) in Saudi Arabia which found no significant association of number of children in the household with enuresis . Children living (with their parents) showed significant association with history of breastfeeding of enuretic children which agrees with (14) in Lucknow India that found a significant association between nuclear family and enuresis . Paternal education showed significant association with history of breastfeeding of enuretic children which is in agreement with a study (2) in Saudi Arabia which found significant association of low paternal education with enuresis .

Others Sociodemographic characters of parents revealed no significant association with history of breastfeeding of enuretic children: Household Income , this is in agreement with (26,31) .It was reported that families with high income level, increased the use of disposable diaper for a prolonged time that delayed implementation of toilet training . Also, no significant association with history of breastfeeding of enuretic children with living in extended families ,in agreement with(14) in India , mother education, mother occupation , paternal occupation , are all in agreement with (2) , sleep history is in agreement with (16) in Turkey. Possible reasons for such a wide variation among countries and even within different regions of Iraq might be due to socio-cultural variations between the countries and regions and the difference in study design starting from the definition of the study population, population based or health facility-based, and may be due to differences in selection criteria, including age ranges, definitions of enuresis, genetic predisposition, traditional and cultural background (22). Nocturnal enuresis is an old but still prevalent clinical problem in childhood and adolescence. The traditional view is that in most cases bed-wetting is due to a developmental immaturity of voiding control, and most enuretic children will ultimately acquire normal control with age (32) .

Conclusion

This study confirmed various risk factors for nocturnal enuresis in addition to breastfeeding as a risk factor. Male (gender), family history , low educational level of parents , low socioeconomic status , irregular sleep, unemployment of mother and nuclear family were related to incidence of enuresis . Duration of exclusive breastfeeding less than 6 month and short total duration of breast feeding was higher in enuretic children . Toilet training is statically associated with breastfeeding .

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