Original article

The Prevalence of Enuresis in School Age Children in Zahedan in 2013-2014

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Abstract

Background: Enuresis is a common urologic problem in pediatric. Enuresis is a symptom with probable multiple etiology such organic developmental disorders or psychological problems. Primary enuresis is often associated with a family history of delays in gaining urine control at the night. The prevalence of enuresis at age 5 are approximately 7% of boys and 3 % of girls. This study aimed to determine the prevalence of enuresis was done in school children in Zahedan.

Methods: In this cross-sectional study among 7-12 years old children in the city of Zahedan was in 2013-2014. We have contact with their parents, were asked about their child's enuresis was based on the DSM-IV-TR criteria.

Results: 1133 school age children participated in this study that 566 of them (50%) were male. 64 children (5.6%) were diagnosed with enuresis. Prevalence of enuresis decreased with increasing age. Also prevalence of this disorder is higher in boys. Also significant statistically correlation between family histories of this disorder and prevalence of enuresis was seen.

Conclusion: Prevalence of this disorder was lower than other studies, which it may be because ethnic and cultural differences among the communities. Given the high prevalence of this disorder, it is felt necessary to raise the awareness of parents.

Keywords: *Prevalence, Enuresis, Children, Zahedan*

Introduction

Enuresis is frequent voluntary or involuntary voiding of urine on bed or clothes. This problem should be repeated 2 times a week and at least 3 months pass and make clinically significant discomfort or significant impairment in social or education (1). Enuresis is a common urologic problem in pediatric (2) and in 82% of children 2 years old, 49% of children 3 years old, 26% of children 4 years old and 7% of people 5 year with enuresis have been reported (2). The nocturnal enuresis is more common in boys (50%) (2).

Enuresis is a symptom with probable multiple etiology such organic developmental disorders or psychological problems. Primary enuresis is often associated with a family history of delays in gaining urine control at the night. Etiological is multifactorial and not fully understood (2, 3). Taking into account enuresis factors such as education level and deep sleep, need to know, appropriate training in the management and treatment of these children's parents are considered (4).

The prevalence of enuresis in boys is double than girls, enuresis at age 5 are approximately 7% of boys and 3 percent of girls and its prevalence increases with age so that in 10 years, prevalence of this condition is less than 3% of girls and 2 percent of boys and in 18 years, only one percent of boys and less than one percent of girls suffer from enuresis. Children in stressful families have poor

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prognosis. The prevalence of daily enuresis is less. 2% of all children 5 years old suffer from daily enuresis and girls are more involved and rarely seen after age 9 (5-9).

Mental health problems in children with enuresis are 2-6 times than general population (10). Enuresis can facing families to serious mental disorder tension and is a major cause of discomfort of children and adolescent. Parents are often found fear mixed with anger and irritation and parents may think that enuresis is due to laziness or intentionally done or think they are to blame. A lack of knowledge can cause them to lose these kids are angry. They punish, humiliate, or are ostracized. It can lead feel anxious or guilty in children and upset them. the amount of disruption depends on restrictions to their social activities, their self-efficacy, severity of rejection by their peers, parents and caregivers, it possible to rash the body of children or children have pain and always give bad smell that cause social rejection, unless health care are taken (11-13).

Sirangam Shreem and et al had a study on 1136 on American's children to measure the prevalence of enuresis according to American (DSM). The result was that during the 12-month prevalence of nocturnal enuresis is 4.45 % and the rate for boys was 6.21 % that were much more than girls (2.51%), It also concluded that enuresis is common among American children and small number of families are follow treatment nocturnal enuresis with large effects on the psychological (14).

Emam Ghoreyshi also arranged study of enuresis in children in Jahrom and Factors influencing a thousand children aged 6-11 years in selected clusters of school-age children and parents responded to a questionnaire. He concluded that the overall prevalence of enuresis was 16.5%. And only a third of parents who acting to treat their children (15).

Akhavan Karbasi and colleagues also perform cross - sectional study for examine the associated factors with enuresis in children 6 years old. 200 boys and 200 girls' aged 6 cluster sampling in Yazd 84-85 - were selected. They concluded that the 8.25% and 15.25% of children according to DSM IV TR and ICD-10 criteria for primary enuresis that was more common in boys than girls and concluded since a small number of families to seek medical consult and treatment for their children, so this educational program is essential (16). Several studies have shown that Enuresis is associated with behavioral disorders and most often behavioral problems in children seems to occur. Enuresis also leads to several psychological disorders and is a problem for the family. And therefore it is important to pay attention to evaluate and treat children with enuresis. This study aimed to determine the prevalence of enuresis was done in school children in Zahedan 2013-14 years.

Method

In this cross-sectional study among school age children in the city of Zahedan was done between September 2013 to September 2014. Inclusion criteria were at the age of 7 to 12 old. Exclusion criteria were as follows: disease or diabetes insipidus or mellitus, Spina bifida, Seizure, sickle cell anemia, urinary tract infection, chronic renal failure and use drugs that were asked from participant's parents. Based on previous studies, the sample size, 1133 was set (15, 16). At this stage cluster sampling was conducted. For the sampling, the schools were divided into two regions and each region were selected has four girls and four boys elementary school and among schools, all first to fifth graders were checked And 15 students in each class were randomly selected (odd numbers) then coordination with school administrators and have contact with their parents, were asked about their child's enuresis was based on the DSM-IV-TR criteria. All information required on the forms was collected by the researcher and then was analyzed with chi-square and independent T-test by using SPSS #18.

Results

1133 school age children participated in this study. 566 patients (50%) were males and 567 (50%) were female. The mean age of the study population was 9.20±1.45 years (7-11). 40 children (3.5%) of 1133 children had a family history of enuresis. Also 64 children (5.6%) were diagnosed with enuresis. 28 patients had dysuria (2.5%) And 45 (4%) suffered from frequency. Finally, 24 (2.1%) were diagnosed with constipation. The mean number of nocturnal in patients, was 5.17±0.21 times (2-7) a week.

16 children (7.9%) among 7 years old children, 23 Children (11.1%) of 8 years old children, 8 children (5%) among 9 years old children, 8 children (2.9%) among 10 years old children and 9 children (3.2%) among 11 years old children were diagnosed with enuresis. (Table1)

Table1. Prevalence by age

Age	Frequency	Percent
7 years old	16	7.9%
8 years old	23	11.1%
9 years old	8	5%
10 years old	8	2.9%
11 years old	9	3.2%
P value	<0.001	

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As can be seen, in 8 and 7 years old children, was highest prevalence of enuresis and decreased with increasing age. Based on chi-square test and independent T-test, there is significant relationship between age and the prevalence of enuresis. (p <0.001)

Among the boys, 44 children (7.8%) and 20 children (3.5%) among girls were suffering from enuresis. As can be seen in the prevalence of this disorder is higher in boys and with chi-square test, there was a significant relationship between gender and prevalence of enuresis. (p = 0.002) (Table2)

Table2. Prevalence by gender

Gender	Frequency	Percent
Male	44	7.8%
Female	20	3.5%
P value	0.002	

33 children (8%) of first children, 14 patients of second child of (3.8%), 12 children (6.1%) of third child, 2 children (7/2%) of fourth child, 1 child (3.4%) of the Fifth children, and 1 child (5.3%) of sixth child of family were diagnosed with enuresis. There was the greatest prevalence of enuresis in the first children. Independent T-test and chi-square showed no significant correlation between ratings of children and prevalence of enuresis. (P> 0.05)

People who had a positive family history, 40 patients (100%) were diagnosed with enuresis and in those without a family history of the disorder, 24 patients (2/2%) were diagnosed with the enuresis. The chi-square test showed significant statistically correlation between family histories of this disorder and prevalence of enuresis. (p <0.001) (Table3)

Table3. Prevalence by Family History

Family History	Frequency	Percent
Positive	40	100%
Negative	22	2.2%
P value	<0.001	

8 patients (12.5%) of those had this disorder suffering from dysuria that according to the chi-square test was significant statistically difference. (p <0.001) Also, 20 patients (31.3%) had frequency that according to the chi-square test was statistically significant difference (p <0.001). Also 11 patients (17.2%) suffering from constipation that according to the chi-square test was statistically significant difference. Deep sleep in 38 patients (59.4%) was seen.

Discussion

Enuresis is the most common cause of bedwetting because of delay in developing the ability to stay dry. Delay in process of feeling of a full bladder seems is the main reason. (17, 18) prevalence of this disorder related with gender, age, region, demographic characteristics, include criteria in study and etc.

In this study, 1133 primary school children in Zahedan were studied. The children of case study have 7 to 12 years old and the number of girls and boys was equal. Most children were a first or second child in their families. 5.6% of the subjects were diagnosed with the disorder. Besides enuresis disorder, other disorders, such as dysuria and constipation frequency were examined. It was also shown that people who suffer from this disease, an average of 5 times per week suffer from enuresis. The prevalence of enuresis in children 8 and 7 years had the highest prevalence rate and decreases with age increases that these results were statistically significant. The prevalence of enuresis between boys in boys doubles girls and this finding was also statistically significant. The prevalence of enuresis in children was more common in the first and second child of families, but the difference was not significant. And also was highly significant association between family histories of this disorder. Existence frequency and dysuria and constipation were significantly associated with this disorder. Sureshkumar and et al in 2003-2004 the result of the 2856 questionnaire about the prevalence of enuresis showed, the prevalence of enuresis was 18.2% which 12.3% of patients mild and 2.5 % moderate, and 3.6% had severe enuresis. In this study, our study was much higher prevalence of enuresis and in this study. (21)

Sirangam shreem and et al in 2004 concluded within 12 months of the prevalence of enuresis was 4.45% and prevalence in boys was 6.21% that much more than girls (2.51%) were also concluded that enuresis is common among American children and small number of families seeking treatment for enuresis despite its huge impact on the mental health. The results of study are very similar with our study , the prevalence of this disorder in America is close to our results, In this study, the prevalence of enuresis in boys has nearly doubled than girls, and is also consistent with our results.(14)

Ali Gunes and et al also concluded prevalence of enuresis was 14.9% that prevalence decreased with increasing age and wasn't much difference between boys and girls. And concluded that enuresis is a problem health childhood and we must an attempt to prevent it at all levels. In this study, the prevalence of enuresis were higher than our study and also found no significant difference between

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the genders that our results are not consistent with this findings but in this study when age increases prevalence of the disorder reduced, which this part of the study is in agreement with our results.(4)
Imam Qureshi also concluded that the overall prevalence of enuresis is 16.5% that prevalence in boys was 19.7% that was more common than females (12.2%). Also only a third of parents treat their children. In this study, the prevalence of the disorder is higher than our study However, this study also suggests that the prevalence of these disorders in boys is higher that our study is consistent with these findings. (15)
sedighe akhavan karbasi and Colleagues also concluded that 8.25% and 15.25% of children, according to DSM-IV and ICD-10 criteria had primary enuresis and this disorder was more common in boys than girls and concluded that few families to get medical advice and treatment for their children so educational programs is necessary. In this study, the prevalence of this disorder is obtained similar our results, and higher prevalence of this disorder in males is pointed out that these results are consistent with our results. (16)
Most of the above studies, prevalence of the disorder was higher than our study, which it may be because ethnic and cultural differences among the communities. Parental awareness can also affect the results of our study. But in most studies this disorder is more common in males and decreased with increasing age. Given the high prevalence of this disorder, it is felt necessary to raise the awareness of parents.

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