

Research Article

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Prevalence of Nocturnal Enuresis in School-age Children in Rafsanjan

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Introduction

Nocturnal enuresis is a common childhood disorder and refers to urination in bed or clothes at some stage in the night time sleep among

Introduction: Nocturnal enuresis is an important developmental problem for school age children and it can cause emotional and social problems for children and their families. This study was aimed to determine the prevalence of enuresis in school children aged 6-8 years in Rafsanjan, Iran, during 2014.

Material and Methods: In this cross-sectional study, 1080 school children aged 6-8 were selected using a random cluster sampling method. Questionnaires were distributed among the children to be answered by their parents.

Results: The overall prevalence of nocturnal enuresis was 10.6% (CI 95%: 8.76 - 12.44); 91.3 % of them had primary and 8.7% had secondary nocturnal enuresis. Prevalence in girls and boys were 8.44% and 12.3% respectively. Factors such as parental education, family income, and age were significantly associated with nocturnal enuresis.

Conclusions: The results showed that the prevalence of nocturnal enuresis in our study is average. Since a minority of families seek medical advice and treatment for their children, family education and awareness is essential in this regard.

Keywords: Nocturnal Enuresis; School Age Population; Child.

Running Title: Nocturnal Enuresis in School-age Children in Rafsanjan

children older than five years which usually occurs during the first one-third of the night [1]. The prevalence of enuresis is 5%-10% among 5-year-olds, 3%-5% among 10-year-olds, and around 1% among people 15 years or older [1].

Nocturnal enuresis might be primary or secondary; a child with primary nocturnal enuresis has never been dry at nights, but a child with secondary nocturnal enuresis has been dry in the past and has acquired this problem as a result of specific causes [2]. The etiology of nocturnal enuresis has not been fully determined but it is assumed that different factors (genetic, physiologic and behavioural factors) are involved in the etiology of nocturnal enuresis [3]. Although, nocturnal enuresis is usually considered a natural aspect of development, it doesn't have any serious physical complications and spontaneous recovery usually occurs, yet in most cases it has many negative psycho-social effects on children [4,5] and their families [6,7]. Chronic anxiety [8], low self-esteem [9], feeling of shame and social isolation [10] are common secondary problems that are caused by nocturnal enuresis. Usually, the psycho-social effects of nocturnal enuresis is the main subject of consideration [11]. Since, nocturnal enuresis has several negative effects on children and their families, it requires further investigation. This study is aimed at investigating the prevalence of nocturnal enuresis among 6 to 8 year old school children in Rafsanjan.

Material and Methods

Study population included school children aged 6-8 who attended primary schools of Rafsanjan, a city located in the center of Iran. We calculated a sample size of 1070 and by considering the possibility of dropouts we expanded it to 1300 and used a random cluster sampling method. In order to collect data, after acquiring permission from the authorities we randomly selected schools and contacted them explaining the goal of the study. After that the questionnaires were sent to families and they were asked to complete them. Our questionnaire had two parts: part one collected data regarding demographic variables of children and their families and part two collected data about the medical problem under investigation (nocturnal enuresis). In this study, nocturnal enuresis was defined as at least two times bed wetting during the previous week. The data analysis was carried out using SPSS version 18 and associations were calculated by chi-square test.

Results

In this study 1300 questionnaires were sent to parents and 1080 of them were completed and

returned to us. The demographic variables and characteristics of samples are presented in table 1. The prevalence of nocturnal enuresis was 10.6% (CI 95%, 8.76-12.44). Among children who had nocturnal enuresis, 91.3% had primary nocturnal enuresis and 8.7% had secondary nocturnal enuresis. The prevalence among girls and boy were 8.44% and 12.3%, respectively. It was also found that 3.35% of affected children had diurnal enuresis, too. Most of the children with nocturnal enuresis had no history of nocturnal enuresis in their parents (95.7%). In terms of parental reaction to nocturnal enuresis, it was revealed that most of them hadn't applied any intervention and had awaited spontaneous recovery. Prevalent interventions were waking up the children from sleep, restriction of drinking fluids at nights, psychiatric counselling, child education, medical therapy and using a system of reward and punishment.

Discussion

Nocturnal enuresis is an important issue in the development of school aged children and can cause serious psychological and social problems for children and their families [12]. In our study, the prevalence of nocturnal enuresis was 10.6% which is considered average compared to other studies. In a previous study that was conducted in Iran, the prevalence of nocturnal enuresis among a sample of 7562 children aged between 5 to 18 was 6.8% [13]. In other countries, the prevalence of nocturnal enuresis is estimated to be 1.4% to 28% among 5 to 12 year old children [14]. Based on our findings, the prevalence of nocturnal enuresis in boys was higher than girls, but the difference was not statically significant. This finding is in conjunction with some previous studies [15]. It is also revealed that the prevalence of nocturnal enuresis decreases by age; which is similar to previous studies [16,17]. Our study along with previous studies [14,18] revealed that nocturnal enuresis is associated with some familial factors such as level of education of parents, toilet training and health education for children. Nocturnal enuresis was less common in families with a higher socio-demographic status.

Conclusion

Over all, the prevalence of nocturnal enuresis in our study is considered average compared to other studies. Yet, this condition has a high importance in psychological adjustment and

variable	Nocturnal enuresis		P-value*
	Yes (Total: 115) N (%)	No (Total:965) N (%)	
Gender			0.062
- Boy	80 (69.6)	585 (60.6)	
- Girl	35 (34.1)	380 (39.4)	
Type of school			0.304
- State	74 (64.3)	573 (59.4)	
- Non-profit	41 (35.7)	392 (40.6)	
Age			0.002
- Six	44 (38.3)	227 (23.5)	
- Seven	39 (33.9)	374 (38.8)	
- Eight	32 (27.8)	364 (37.7)	
Father education			0.0.23
- Illiterate	4 (3.5)	25 (2.6)	
- Primary school	16 (13.9)	91 (9.4)	
- Middle school	34 (29.6)	193 (20)	
- High school diploma	43 (37.4)	416 (43.1)	
- University Graduate	18 (15.8)	240 (24.9)	
Mather education			0.520
- Illiterate	2 (1.7)	15 (1.6)	
- Primary	18 (15.7)	105 (10.9)	
- Middle school	20 (17.4)	155 (16.1)	
- High school diploma	54 (47)	469 (48.6)	
- University Graduate	21 (18.3)	221 (22.9)	
Income			0.023
- Poor	22 (19.1)	106 (11)	
- Average	78 (67.8)	652 (67.6)	
- Good	15 (13)	198 (20.5)	
- High	0 (0)	9 (0.9)	
Number of children in family			0.589
- 1	17 (14.8)	136 (14.1)	
- 2	64 (55.4)	543 (56.3)	
- 3	21 (18.3)	197 (20.4)	
- 4	11 (9.6)	59 (6.1)	
- >4	2 (1.7)	30 (3.1)	

many families don't have enough knowledge about the importance and management of it. Family education can have an important role in the management of nocturnal enuresis.

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Conflict of Interest

None declared

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