ORIGINAL ARTICLE

Frequency of Nocturnal Enuresis in Rural Areas of Sialkot

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ABSTRACT

Aim: Frequency of nocturnal enuresis in rural areas of Sialkot.
Study Design: It was a descriptive case series.
Method: Children of 6-15 years were included in the study from rural areas of Sialkot. For this study nocturnal enuresis was defined as urination of children in clothes while asleep once a week for three months or more. Exclusion criteria included children with diurnal incontinence, symptoms of urgency, frequency, dysuria, delayed developmental milestones, abnormalities of spine, any major physical handicap, any chronic illness and those who refused interview.
Conclusion: The increased frequency of nocturnal enuresis in rural area of Sialkot is likely due to low income and low education of this area. In fact this is a pilot study in this regards and further studies should be done to know the exact prevalence of nocturnal enuresis in rural and urban areas.
Keywords: Children, Nocturnal enuresis, rural areas of Sialkot

INTRODUCTION

Nocturnal enuresis is one of common problem encountered in children all over the world affecting all cultures and races. It is defined as occurrence of involuntary voiding at night after 5 years, the age at which volitional control of micturition is expected[1]. It can be primary when nocturnal urinary control is never achieved or it can be secondary when child was continuously dry at night for 6-12 months before loss of volitional control of urine again at night. However, enuresis would not ordinarily be diagnosed in a child under the age of 5 years or with a mental age under 4 years[2]. About 75% of children are wet during the night only while rest are incontinent both during day and night which is usually associated with abnormalities of urinary system. . Enuresis is categorized as Monosymptomatic enuresis (MSE) or non-monosymptomatic enuresis (NMSE)[3,4].

MSE occurs in the absence of any daytime voiding symptoms, such as frequency, urgency, or daytime incontinence. Children with enuresis and lower urinary tract symptoms are said to have NMSE. Nocturnal enuresis without overt daytime voiding symptoms affects up to 20% of children at the age of 5 yr; it ceases spontaneously in approximately 15% of involved children every year thereafter. Its frequency among adults is <1%.

Nocturnal enuresis is usually a benign condition but it has deep psychosocial impact on the family. It is a bothersome and distressing disorder in enuretic children. Enuresis negatively affects the self-esteem, interpersonal relationships, and social performance of affected children and their families. Quality of life of mothers of these children is adversely affected because mothers had to do the extra washing of the laundry as well as bathing the child. Moreover it is dealt as a social taboo. Mother as well as the children do not prefer to stay a night outside their homes. It is given due importance in the developed countries and children are given full support including specialist consultation as well as psychological support to avoid negative impact on the family and children. Basic life support facilities are even at times not available in developing countries especially in far flung rural areas and problems like nocturnal enuresis remain in the background.

The basic pathophysiology includes small bladder capacity, decreased production of anti-diuretic hormone during sleep resulting in increased volume of urine production and deep sleep from which the child is difficult to arouse on filling of bladder[5].

Although many studies about nocturnal enuresis are available in the world regarding their type, prevalence, aetiology, investigations and treatment options. Few studies of nocturnal enuresis are carried out in Pakistan but usually in big cities only and ignoring the rural areas. People in the rural area usually belong to low socio economic group and have low education status. This study was carried in Sialkot especially addressing the rural areas as there is no known published data of this area.

MATERIAL AND METHOD

This study was conducted by Department of Paediatrics, Islam Medical College, Sialkot. The duration of study was from 1st October 2016 to 31st

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December 2016. This study was community based cross sectional study. It was carried out in rural area which included six villages of tehsil Pasroor, District Sialkot. Data was collected from six villages named Nakhay, Abdali, Sohian, Tingranwali, Jakhar, Laveray of Tehsil Pasroor during door to door visit. These villages belonged to lower socioeconomic group. Most of the people work in factories in Sialkot as general labourers or skilled labourers on daily or seasonal basis. A few work in their small farms.

Data was obtained according to a questionnaire. The interviewer was trained to collect data accordingly. Consent was taken prior to interview. Children of 6-15 years were included in the study. For this study nocturnal enuresis was defined as urination of children in clothes while asleep once a week for three months or more. Exclusion criteria included children with diurnal incontinence, symptoms of urgency, frequency, dysuria, delayed developmental milestones, abnormalities of spine, any major physical handicap, any chronic illness and those who refused interview. The data thus obtained was analyzed in SPSS 21.

RESULT

Details of 1605 children were obtained from parents/older children. 55 children having NMSE were excluded from the study. 768 were female and 782 were male. Nocturnal enuresis was present in 387 children (25%). Gender wise distribution of enuretic children was 25.3% were female and 24.7% were male. There was no significant difference between males and females.

Table Age of child nocturnal enuresis crosstabulation

Age of child (years)	Nocturnal enuresis		Total
	Yes	No	
6	30	149	179
7	169	162	331
8	165	29	194
9	210	24	234
10	167	6	173
11	132	7	139
12	92	3	95
13	86	4	90
14	66	1	67
15	46	2	48
Total	1163	387	1550

Nocturnal enuresis was most common between 6-7 years of age. Percentage of children with nocturnal enuresis was 83.2% (149/179) and 48.9% (162/331), respectively at 6 and 7 years. Family history of nocturnal enuresis was present in 171 children. Fluid restriction before going to bed was used as a treatment modality in 358 of children. Medications for treatment were used in 21% of children but with poor outcome. Enuresis alarm was never heard off by the people. Frequency of nocturnal enuresis decreased with age.

DISCUSSION

Nocturnal enuresis is known to be a worldwide problem with prevalence rates of 1.4 to 28% in children 6-12 years of age varying from country to country. Most of the studies were done in schools where children were given questionnaire. This study was done by going door to door as it is considered a social taboo in our culture so getting true answers from the questionnaire sent to home was unlikely.

Overall frequency of enuresis was 25% in children 6 -15 years of age in our study which is very high as compared to most of other studies. Only a few studies are carried out in Pakistan. It was 9.7% in children 6-12 years of age in study from Peshawar by Shah S and et al in 2009[6] similarly a study in Karachi in 2005 by Mithani S et al revealed a prevalence of 9.1% in 3-13 years old children[7], 6.5% in 1993 during health survey of Pakistan in NWFP[8].

Most of the studies in the world revealed prevalence of around 10% of nocturnal enuresis in children. 8% in children 5-10 years old in Khorramabad[9], 12.6% in Lucknow[10] 15.7% in Egypt[11], 18.7% in Urmia, Iran in 7-11 year old[12], 17.5% in 6-6.5 years old in Iran[13]. 7.7% in Ormeih, Iran[14]. A few studies revealed a high prevalence of nocturnal enuresis. Penbegul et al reported a prevalence rate of 25.9% in Diyarbakir, Turkey[15], Nigeria 22.2%. A study conducted in Hong Kong by Yeung et al on 3521 children mentioned a rate of 31.5%[16].

A higher prevalence 61.4% rate was associated low socioeconomic group in a study in Egypt by Mohammad et al[17], in Assuit 32.45%.[18]The prevalence rate of nocturnal enuresis was 7.2% and 4.8% in rural and urban areas of KPK (NWFP) respectively[8]. Family history of nocturnal enuresis was present in 44% of the enuretic children. In a few cases all the siblings were having nocturnal enuresis. Khan et al reported a positive family history in 35%[19]. A family history of 53% was observed in Malaysia[20] 37.2% in Yemen[21], in Diyarbakir 64.8%[15].

Fluid restriction before going to bed was used as a treatment modality in 92% of enuretic children with the belief that child is going to improve as the age increases. In Nigeria fluid restriction was used in 42.8% of patients.[22]Children were woken during the night to urinate and to avoid episode of bed wetting and disturbance for the child and family. Medical consultation was sought in 21% of cases only in our study. This consultation was usually from a general physician or a paramedic at times. The reason

behind this is the low socioeconomic status, no male member is available to take the children to the few specialist located far off. Response to medication was poor due to poor compliance, unavailability of cheap medicine and unable to afford costly medicine. In a study in Karachi by khan et al 23% patients had medical consultation including a doctor or hakim or homeopath and 19% received treatment[19]. In another study only 54% children sought help but only 26% consulted doctors.[7]In Diyarbakir 95% of the parents did not seek medical help[15]. Only 19.8% contacted doctor in Egypt[12].

Nocturnal enuresis was common in 6-7 years in our study. Similar results were seen in other studies as in Karachi where highest prevalence was seen in 6-8 years of age[7], highest rates 62.9% at 6-7 years[11] and 32.9% at 7 years[12]. The prevalence decreased as the child grew older. This decreasing prevalence with was observed in Yemen[21], in Egypt[11,12]. Most of the studies revealed that nocturnal enuresis is common in males as compared to females[24]. In our study females were slightly more 25.3% females versus 24.7% males. Increased prevalence of enuresis was observed with low education status of the parents especially mother[18,24].

CONCLUSION

The increased frequency of nocturnal enuresis in rural area of Sialkot is likely due to low income and low education of this area. In fact this is a pilot study in this regards and further studies should be done to know the exact prevalence of nocturnal enuresis in rural and urban areas.

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