

Research Article

J Ped. Nephrology 2015;3(1):22-25
<http://journals.sbm.ac.ir/jpn>

Emotional Disorders in Children with Monosymptomatic Primary Nocturnal Enuresis

How to Cite This Article: Yousefichaijan P, Salehi B, Reafiei M, et al. Emotional Disorders in Children with Monosymptomatic Primary Nocturnal Enuresis. J Ped. Nephrology 2015;3(1):22-25.

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Received: Nov-2014

Revised: Dec-2014

Accepted: Dec-2014

Introduction

Nocturnal enuresis (NE) is one of the most frequent pediatric pathologies. The prevalence of primary nocturnal enuresis (PNE) is around 9% in children aged 5-10 years and about 40% of them have one or more episodes per week. Still for too long, PNE has not been recognized as a pathological condition, particularly by the medical

Introduction: All children sometimes misbehave and some may have temporary behavioral problems due to stress. For example, the birth of a sibling, a divorce, or a death in the family may cause a child to act out. Behavior disorders are more serious. They involve a pattern of hostile, aggressive, or disruptive behaviors for more than 6 months. The behavior is also not appropriate for the child's age. Nocturnal enuresis (NE) is one of the most frequent pediatric pathologies. The prevalence of primary nocturnal enuresis (PNE) is around 9% in children aged 5-10 years and about 40% of them have one or more episodes per week.

Materials and Methods: in this study, we recruited 146 children with MPNE and 146 healthy children without MPNE aged 6-18 years old. The children behavioral checklist for children behavioral assessment was completed by the parents. Data was analyzed using ANOVA and chi-square tests.

Results: Among 292 children in both groups, somatic complaints, thought problems, delinquent problems, social problems, and ADHD were not significantly different between cases and controls while internalization, externalization, anxiety-depression, aggressive behaviors, isolation-depression, and affective-behavioral problems were significantly different.

Conclusions: Considering the results of this study, the higher prevalence of behavioral problems in children with MPNE highlights the importance of early intervention for better treatment and prevention of behavioral problem in children.

Keywords: Emotional Disturbances; Nocturnal Enuresis; Child.

Running Title: Emotional Disorders in Enuresis

community. As a consequence, there was no specific education at medical schools, and a poor involvement by the practitioners. Enuretic children have a sense of social difference and isolation; some of them do express a low self-esteem. Moreover, self-esteem is improved by the management of NE even if this management fails to cure the condition. Primary monosymptomatic

nocturnal enuresis (PMNE) is a heterogeneous condition for which various causative factors have been identified including nocturnal polyuria, sleep disturbances, reduced bladder capacity or bladder dysfunction, upper airway obstruction, etc. A positive diagnosis of PMNE is based on a complete questionnaire and a careful physical examination. A drinking and voiding chart is an essential non-invasive tool to collect information about the initial drinking and voiding habits of the child, and to reassess the accuracy of the diagnosis. Only motivated patients should receive a specific treatment for their NE and the treatment should be proposed based on the type of PMNE. Emotional and behavioral disorders (EBD) is a broad category that is used commonly in educational settings to group a range of more specific perceived difficulties of children and adolescents. Both general definitions as well as a concrete diagnosis of EBD may be controversial as the observed behavior may depend on many factors. In the course of therapy, there is a time when the child is dismissed from health services and has to improve in his own family environment. If this environment provides good conditions, the course of therapy would be more successful [1-8]. On the other hand, parental function plays an important role in perceiving the child's problems. For example, maternal depression has an impact on her perception of the child. Depressed mothers perceive more behavioral problems in their child and the children of depressed mothers have increased levels of internalizing and externalizing problems. This is also important as parents see the children in their home condition and the diagnosis of some conditions like behavioral problems are made by their statements so if their stress tampers with their perception, it would be difficult to make a diagnosis [9-11]. Parental function and behavioral problems in children with diurnal voiding dysfunction is yet to be evaluated. The aim of this study was to assess EBD in children with MPNE.

Materials and Methods

To perform this case-control study, we assessed the prevalence of behavioral abnormalities in 146

children aged 6-18 years with MPNE and compared the results with a control group that included 146 healthy children with the same age, sex, socioeconomic status, level of education and relationship between parents. In this case-control study, we selected 146 children with diurnal voiding dysfunction (DVD) based on the DSM IV criteria [2] as cases and 146 children without voiding dysfunction (NDVD) as the controls who were all admitted to Amir-Kabir Hospital, Arak, Iran. Our exclusion criteria were: 1) children with known underlying kidney diseases or genitourinary problems, 2) children with psychological disorders and/or mental retardation or nervous system disorders, 3) children whose parents did not cooperate fully, e.g. did not fill the forms completely or decided to withdraw from the study. The control group was selected from pediatric patients with other complaints like trauma, stomachache, back pain, and common cold considering the exclusion criteria. The child behavior checklist (CBCL4/18) was used to evaluate the children's behaviors, which was completed by the parents. The CBCL is a common tool for assessing emotional and behavioral problems in children. The CBCL is used in a variety of settings such as schools, hospitals, and research centers.

The questions are grouped in 8 categorized which focus on different aspects of behavior: social withdrawal (e.g. not wanting to play with friends anymore), somatic complaints (e.g. unexplained stomachaches), anxiety/depression, social problems, thought problems, attention problems, delinquent behavior, and aggressive behavior. The first 3 syndrome scales can be grouped under internalizing and the latter two can be grouped under externalizing problems. All items together are referred to as the total behavioral problems scale. This questionnaire was tested for reliability in a pilot study by researchers with 50 patients in each of the case and control groups. The results were analyzed with SPSS-17 using descriptive statistics for basic information. P-values less than 0.05 were considered significant in our comparisons. This study was confirmed by the ethics committee of Arak University of Medical Sciences.

Results

Overall, 146 cases and 146 controls were selected for study. Demographic data showed that 53.4% of the participants were boys and 46.6% were girls. Moreover, the mean age of children was

Table1. Frequency of behavioral problems in patients with primary nocturnal enuresis and control group [↗](#)

Group Behavior Problems	Case Group (patients)		Control Group		Significance level P Value
	Frequency	Percentage	Frequency	Percentage	
Affective-behavioral problems	15	10.3	4	2.7	<0.008
Internalization disorders	14	9.6	6	4.1	<0.002
Externalization disorders	19	13	3	2.1	<0.001
Aggressive behavior	23	15.8	2	1.4	<0.001
Delinquent behavior	5	3.4	3	2.1	>0.361
Reduced attention and hyper-activity	4	2.7	2	1.4	<0.001
Thought problems	49	33.6	46	31.5	<0.023
Social problems	5	3.4	3	2.1	<0.17
Anxiety-depression problems	35	24	22	15.1	<0.001
Somatic problems	3	2.1	2	1.4	>0.5
Isolation-depression problems	5	3.4	4	2.7	>0.5

7.8±1.1. In the control group, 41.8% were boys and 58.2% were girls with a mean age of 7.7±1.4. Our results showed a significant difference in some of the categories. Comparison of the groups regarding different behavioral problems can be seen in [\(Table 1\)](#).

Discussion

In this study, we compared behavioral problems in children with and without MPNE. Based on the results, mental problems and depression were the most frequent while decreased attention, hyperactivity, and physical problems had the lowest frequency in both case and control groups. Moreover, the data revealed that the mean score of some behavioral problems in MPNE children was three to four times more than healthy children. This finding is in agreement with the results of other studies by von Gontard et al. (8), Joinson C et al. [11] and Kodman-jones et al [7]. Van Hoebeke et al. [6] evaluated internalizing and externalizing disorders in children with nocturnal and diurnal enuresis in a cross sectional study.

Kodman – jones et al reported that the incidence of ADHD in children with day time wetting was 21%, which is higher than our results. De Bruyne et al assessed behavioral problems in children with and without enuresis. They evaluated 5 to 13 years old children with MPNE and investigated parental stress and the association between parental ratings of the children’s behaviors and parental stress. They reported especially mother’s behavioral problems in children with monosymptomatic enuresis [12].

Conclusion

Our study results showed a higher incidence of emotional problems in children with MPNE. Also, based on the results of other studies, behavioral therapy reduces the problem of primary nocturnal enuresis. It seems that timely diagnosis and treatment can prevent the continuation of this disorder and the development of other mental and behavioral disorders. We suggest that children with primary nocturnal enuresis should be evaluated for other mental disorders in an attempt to resolve the problem.

Acknowledgement

This paper was the result of a student thesis. We would like to express our gratitude to all the people who supported and assisted us.

Conflict of Interest

None declared

Financial Support

None declared

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