J Ped Nephrol
Journal of Pediatric Nephrology

Original Article

Role of Non-pharmacological Therapy in Children With Bed Wetting

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Citation Rumana J, Azmeri S, Abdul Qader Md, Mohammad H. Role of Non-pharmacological Therapy in Children With Bed Wetting. Journal of Pediatric Nephrology. 2023; 11(1):26-30. https://doi.org/10.22037/jpn.v11i1.41840

https://doi.org/10.22037/jpn.v11i1.41840

Article info:
Received: 23 April 2022
Accepted: 15 May 2022
Publish: 01 Jan 2023

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ABSTRACT

Background and Aim: Bedwetting or enuresis is not uncommon in children, although its prevalence varies by age. Spontaneous remission of enuresis may occur at a rate of approximately 15% per year, but treatment protocols should be carried out because of its significant impact on a child's family, emotional state, self-esteem, and totally on the quality of life (QoL). Today, non-pharmacological therapy is an initial treatment for enuresis, in which both the parents and children are motivated to take the behavioral management approach. This study was done to determine the effectiveness of non-pharmacological therapy in pediatrics with enuresis.

Methods: This prospective observational research was carried out in pediatrics aged 5 to 15 years with bedwetting who visited the outpatient department of Asgar Ali Hospital from January 2021 to December 2021. They were categorized into two groups, primary and secondary (monosymptomatic and non-monosymptomatic) enuresis according to the definition of the international children's continence society (ICCS). Also, our patients were divided into different age groups: Group A: 5-7 years, group B: 8-10 years, and group C: >10 years, and the response was classified as no response: <50%, partial response: 50-99%, and complete response: 100% reduction in baseline symptom frequency.

Results: Among the 74 patients, 28 cases (38%) were male and 46 cases (62%) were female, with most of them having primary enuresis 72(97%), and only two patients had secondary enuresis. Most patients were monosymptomatic 62(83.7%), and only 12 cases (16%) were non-monosymptomatic. Among 32 patients (43%) of group A, 87.5% had complete response within three months of follow-up, in group B, of a total of 20 patients (27%), 40% had complete and 40% had partial response, and in group C, among 22 patients (30%), only 9% had complete and 46% had partial response.

Conclusion: Non-pharmacological therapy in enuretic patients showed encouraging recovery.

Keywords: Bedwetting, Non-pharmacological therapy, Response, Enuresis, Child

Introduction

Enuresis, often known as bedwetting, affects 15% of children by the age of five, with the majority of them experiencing isolated nocturnal enuresis. Enuresis (synonymous with intermittent nocturnal incontinence) refers to discrete episodes of incontinence during sleep in children ≥5 years of age [1]. Enuresis is divided into two forms, including monosymptomatic enuresis (ME) and non-monosymptomatic enuresis (NME). ME is defined as enuresis in children who do not have any lower urinary tract symptoms and a history of bladder dysfunction and NME is defined as enuresis with lower urinary tract symptoms, like urgency, daytime incontinence, hesitancy, straining, increase or decrease in frequency, weak stream, and bladder dysfunction. ME is also divided into two forms, including primary enuresis with no satisfactory period of dryness, which is the most common form, and secondary enuresis in children who develop enuresis after a dry period of at least six months usually starts after a stressful event, such as caregiver divorce and the birth of siblings [2]. However, the exact cause is still unknown. There are some related factors causing nocturnal enuresis, like maturational delay, genetic factors, nocturnal polyuria, disturbed sleep, small bladder capacity, and detrusor overactivity [3]. Some associated conditions, like neurodevelopmental problems, intellectual disability, autism spectrum disorder, and attention deficit hyperactivity disorder can also cause or exacerbate enuresis [4].

The prevalence of primary ME decreases from 15% at the age of five years to 5% at the age of ten years and then to 1-2% at the age of more than 15 years, with a high rate of spontaneous recovery [5]. Nonetheless, management should be implemented as it is a widespread and distressing situation with a significant impact on a child's emotional state, self-esteem, family, social daily life, and quality of life (QoL). It is also stressful for the parents and caregivers [6]. Non-pharmacological therapy is an appropriate initial therapy for bedwetting, in which both the parents and children are motivated to take the behavioral approach. This study was done to determine the effectiveness of non-pharmacological therapy in children with bedwetting.

Materials and Methods

A prospective observational study was conducted on children aged 5 to 15 years who visited the outpatient department of Asgar Ali Hospital with complaints of bedwetting from January to December 2021. Bedwetting was categorized into primary and secondary enuresis (ME and NME groups), according to the definition of the international children's continence society (ICCS). Also, bedwetting children were divided into different age groups: Group A: 5-7 years, group B: 8-10 years, and group C: >10 years. Bedwetting treatment success in children is classified into three categories: No response (<50% reduction in baseline symptom frequency), partial response (50-99% reduction in baseline symptom frequency), and complete response (100% reduction in baseline symptom frequency). Urine routine analysis was performed almost for every child with ME. This urinalysis, including specific gravity, is used for screening for diabetes mellitus, diabetes insipidus, polydipsia, and occult urinary tract infection (UTI). Renal ultrasonography was also performed for those with significant daytime symptoms and a history of UTI or any signs symptoms of urological abnormalities. Assessment of other co-morbid conditions, such as constipation, adenoid enlargement, and attention deficit hyperactive disorder was done. Children who had any urological abnormality or suffering from diabetes mellitus, diabetes insipidus, or recent UTI were excluded from the study.

Motivational therapy, which is a non-pharmacological treatment, was given to children who themselves and their parents agreed to take some responsibility for their treatment. Non-pharmacological treatment, such as limiting fluid intake in the evening (40% of the total intake during the day (7 AM to 12 PM), 40% in the afternoon (12 PM to 5 PM), and only 20% after 5 PM, using a traditional alarm, getting up and waking the child, avoiding high sugar and caffeine-based drinks, such as tea, coffee, and soft drink, the proper situation of going to the toilet and urinating twice and ensuring that urine is excreted 4-7 times a day were also explained to the patient and parents. Treatment for constipation, pediatric neurologist consultation for hyperactive kids, and treatment for adenoid enlargement were all recommended. The star chart allows you to track dry nights as a record and reward for dry nights. Punishment for bedwetting was discouraged strongly as this can cause increased bedwetting incidents leading to more punishments and shaming. This observational study was done after taking ethical clearance from the institutional ethical committee and also permission was taken from both parents and children who could understand the procedure to continue non-pharmacological therapy for at least three months.

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Results

In this one-year (Jan 2021-Dec 2021) study, a total of 74 children who visited the outpatient department of Asgar Ali Hospital were included. Among 74 bedwetting patients, the majority (62, [83.7%]) were monosymptomatic and only 12 cases (16%) were non-monosymptomatic. Also, all the monosymptomatic patients (72 [97%]) had primary enuresis and only two patients had secondary enuresis. Group A had 32 patients (43%), group B had 20 patients (27%), and group C had 22 patients (22%) (Table 1). After providing non-pharmacological therapy for all children of different groups, they received follow-up monthly, and after three months, their responses were assessed. Among 32 patients of group A, 87.5% had a complete response, 7% had a partial response, and 6% had no response within three months of follow-up (Figure 1). Of 20 patients of group B, 40% had a complete response, 40% had a partial response, and 20% had no response (Figure 2). Among 22 patients in group C, only 9% had a complete response, 46% had a partial response, and 45% had no response (Figure 3).

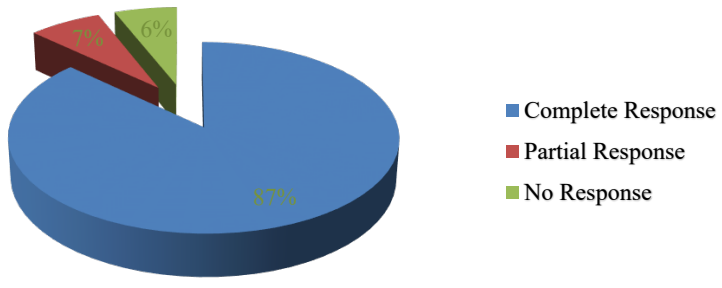
Discussion

In this study, out of 74 patients, 32 patients (43%) aged 5-7 years, 20 patients (22%) aged 8-10 years, and 22 patients (22%) aged >10 years. In another study by Prasad et al. among 114 cases, 88 cases (72.19%) were in the age group of 4-6 years and 14(12.28%), 7(6.14%), and 5(4.39%) cases were in the age groups of 6-8, 8-10, and 10-12 years, respectively, and at younger ages, the presence of nocturnal enuresis was more frequent [7]. Similar results were observed in a study by Wan et al. at five years of age, 15-25% of children wet the bed. With each year of maturity, the percentage of bed wetting declines by 15%. Hence, 8% of 12-year-old boys and 4% of 12-year-old girls were enuretic and only 1-3% of adolescents were still wetting their bed [8]. Here, we found ME the most common among 74 patients (62 cases [97%]), and only 12 cases (16%) were non-monosymptomatic. Previous studies found that MNE was less frequent, among 9037 patients with a documented history of NE, 2141(23%) had MNE and 7166(77%) qualified as having persistent or sporadic NMNE with one or more than one lower urinary tract symptoms.

In our study, the children aged 5-7 years responded well to the non-pharmacological therapy, 87% had a complete response, 7% had a partial response, and 6% had no response within three months of follow-up. In the age group of 8 to 10 years, out of 32 (43%) patients, 40% had a complete response and 40% had a partial response, but in children over 10 years old, only 9% had a complete response and 46% had a partial response. recent study in this regard showed encouraging results; in the age group of 6-8 years, the response rate was 78.57%, in the age group of 8-10 years, it was 85.71%, and in the age group of 10-12 years, it was 100%. The rate of spontaneous remissions is more in ME. While the initiation of treat-

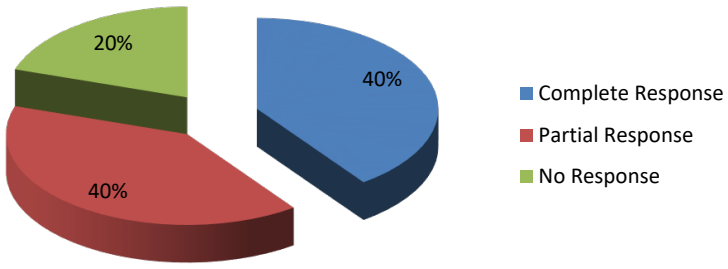
Table 1. The number of patients in different age groups

Groups	Male	Female	Total	%
A	10	22	32	43
B	8	12	20	27
C	10	12	22	22
Total	28	46	74	100



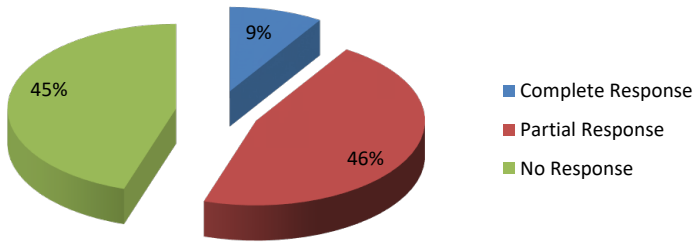
Group A: 32 Patients

Figure 1. Response to non-pharmacological therapy after three months (group A)



Group B: 20 Patients

Figure 2. Response to non-pharmacological therapy after three months (group B)



Group C: 22 Patients

Figure 3. Response to non-pharmacological therapy after three months (group C)

ment for MNE varies from child to child, it usually depends on whether the child or the child's caregiver sees bedwetting as a problem and how strongly motivated they are to participate in a treatment program. Nocturnal enuresis usually becomes a problem for a child when it interferes with their ability to socialize with peers [9-10]. The most important impact of treatment is determining if the child is motivated to become dry. Motivational therapy or non-pharmacological therapy should be started in those children where both the child and the parents are motivated and ready to accept responsibility. Children usually less than six years can be managed with education and motivational therapy. However, age should not be the only criterion for the initiation of active treatment [11]. Enuresis is rarely associated with low self-esteem, and treatment can improve self-esteem, even if treatment is not completely successful [12]. This is especially true for behavioral management [13]. Also, if the child is not motivated to dry, the treatment should be delayed or simplified until the child is ready [14].

We found a good response to non-pharmacological treatment in the younger age group, as the rate of spontaneous recovery is higher in the younger age group, and treatment of risk factors, such as constipation, and fluid restriction showed good results. Also, in the older age group, the failure rate was higher due to a lack of spontaneity and improper compliance of parents due to sleep disturbance caused by actions, such as alarms, lifting, and waking up the child.

Conclusion

Non-pharmacological therapy in children with bedwetting showed encouraging recovery. The most important factor to remember is that with care and persistence, wetting the bed can be successfully treated.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

Funding

This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

Authors' contributions

The authors equally contributed to the preparation of this article.

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Conflict of interest

The authors declared no conflict of interest.

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