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Management of Monosymptomatic Enuresis in Children

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Abstract

Enuresis is a health problem that is frequently seen in children and affects the quality of life of the child and the family. It is divided into two groups as monosymptomatic and non-monosymptomatic enuresis. Monosymptomatic enuresis is more common in children. The International Children's Continence Society (ICCS) recommends that monosymptomatic enuresis or enuresis nocturna can be used to mean the same thing as enuresis. This article focused on monosymptomatic enuresis and its nursing management. Families have considerable responsibilities in the prevention and treatment of enuresis. A holistic approach to the child and the family should be adopted in the care and treatment of the child with enuresis. With this respect, in every stage of health services, nurses play a significant role in the provision of training, counseling, and support services to the child with enuresis and the family. Nursing management of children with the enuresis problem is studied under four headings: 1) evaluation of children with enuresis; 2) non-pharmacological treatment approaches and nursing management; 3) pharmacological treatment and nursing management; 4) nursing management for the psychosocial effects of enuresis.

1. Introduction

Enuresis is one of the most common health problems in children. The International Children's Continence Society (ICCS) defines enuresis as wetting of clothes or bed with urine for at least three months in children over the age of 5 (Austin et al., 2016). According to the definition of the DSM-V, it is urinary incontinence in a child aged over 5 for at least 3 months and more than once a month (Goldstein & DeVries, 2017).

Urinary incontinence in children is a health problem that often affects children of all ages and cultures. Enuresis is divided into two groups as monosymptomatic enuresis (MSE) and non-monosymptomatic enuresis (NMSE). Lower urinary tract symptoms (LUTS) (overactive bladder, inadequate bladder activity, delayed urination, etc.) are not seen in monosymptomatic enuresis, but children with non-monosymptomatic enuresis exhibit these symptoms. Children who have never managed to stay dry at night are called primary MSE, and children who develop enuresis after at least 6 months of dryness are called secondary MSE. The coexistence of psychiatric disorders and stress with enuresis is more common in secondary enuresis (Bahnasy et al., 2018; Bogaert et al., 2019). The vast majority of children with enuresis match the definition of primary MSE (Kabay et al., 2019).

In a study conducted in China, it was determined that children with nocturnal enuresis was not older than 5 and that its prevalence was 9.09% in boys and 6.03% in girls (Huang et al., 2020). The prevalence of nocturnal enuresis in Egypt was found to be 18.4% in urban areas and 17.5% in rural areas (Hamed, Yousf, & Hussein, 2017). The overall prevalence in Turkey was reported to be between 6.1 and 18% (Tavukcu et al., 2018; Savaser et al., 2018).

Primary MSE affects children and their families psychologically and socially. Studies show that children with enuresis have low self-confidence (Elbahnasawy & Elnagar, 2015; Hamed et al., 2020; Yaradilmiş et al., 2020). Also, they can exhibit psychological and behavioral problems, such as depression, anxiety, externalizing disorders, and distractibility. Psychosocial problems can appear as the impact of enuresis as well as showing up as an etiological factor (Vasconcelos et al., 2017). Also, enuresis is a challenging problem in the family. Families may have difficulties pursuing social activities with the child. When bed linens need to be changed constantly during holidays or camping, they experience difficulties in the care of the child or establishing communication due to the psychological effects of enuresis. Families can blame themselves for the problem (Toruner & Buyukgonenc, 2017).

Professional interventions that evaluate the child and family in a holistic approach are needed in the management of monosymptomatic enuresis. Meanwhile, nurses have significant responsibilities in the management of enuresis, which affect the child and the family. Nursing management in children with enuresis starts with a detailed evaluation including taking a detailed history of the child and doing a physical examination. It also includes providing counseling and training to children and families during the treatment phase, organizing care, and offering social support services. This article addresses the nursing management of primary

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monosymptomatic enuresis that is common in children comprehensively.

2. Nursing Management of Primary Monosymptomatic Enuresis in Children

Nursing management of enuresis in children can be studied under four headings.

1. Evaluation of children with enuresis
2. Non-pharmacological treatment and nursing management of enuresis
3. Nursing management in the pharmacological treatment of enuresis
4. Nursing management for the psychosocial effects of enuresis on the child and the family

2.1. Evaluation of children with enuresis

A detailed history and physical examination are important in planning the appropriate treatment and care for the child with enuresis. Taking a detailed history and conducting a physical examination are the most important factors in the evaluation of children with enuresis. The absence of LUTS in children is necessary for distinguishing enuresis (Bogaert et al., 2019). Also, questions to be asked to the child and the family about stressors in their life will help shape the diagnosis, treatment, and care. Table 1 presents questions that can be asked to the child and the family when taking the history of a child followed up with enuresis.

Physical examination to be performed by healthcare personnel according to age is important in planning the care. The nurse should evaluate the child's growth according to standard percentiles. A neurological examination of the child, including an assessment of gait, sensorium, and reflexes should be performed. Examination of the genital area, and color change in the skin are important findings in a physical examination in terms of the presence of dermatitis in the child. Examination of the abdomen, listening to bowel sounds, and evaluating the presence of constipation are also important (Moore et al., 2016).

A urine analysis should be done to evaluate parameters, such as glucosuria, hematuria, proteinuria, or bacteriuria, in laboratory tests. Besides, urine flow pattern (voiding curve, staccato, plateau, intermittent, etc.) should be analyzed and evaluated for the presence of obstruction (Kuwertz-Bröking & von Gontard, 2018).

The nurse asks parents who have a child with enuresis presenting to the hospital to keep a bedwetting diary for two weeks and a urination diary involving at least 2 whole days a week. Thus, the child's urination frequency, daytime urine output, average maximum and minimum volume of urination, and daily fluid intake can be determined (Bogaert et al., 2019). With this evaluation, it is important to exclude medical diseases that may cause enuresis (diabetes mellitus, spinal dysraphism, etc.) and to identify that enuresis is monosymptomatic (Jackson, Williams, Rafacz & Friman, 2020) The social relationships of the child and the presence of psychological problems are more common as a result of secondary enuresis. Children should be evaluated with a careful physical examination for signs of sexual abuse (Tai, Tai, Chang & Huang, 2017).

2.2. Non-pharmacological treatment and nursing management of enuresis

Non-pharmacological treatment has an important place in the treatment of enuresis. Non-pharmacological approaches include fluid restriction,

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Table 1. Questions that can be asked to children and families with enuresis while taking the history

Taking the history
About the child
How long has nighttime bedwetting been persisting?
Do all the clothes or only underwear of the child get wet?
How often does the child urinate?
How much fluid does the child consume in 24 hours?
Is the problem habitual or related to something else?
Is the urine flow during urination continuous, slow, or interrupted?
What is the child's posture during urination?
What does the urine look like? Does it have a smell?
About the family
Is there a family history of enuresis?
Is there a urinary system anomaly or the like in the family?
What is the significance of the problem for the family?
What is the attitude of the family when the child wets his/her clothes or the bed? (blaming/punishment etc.)
About toilet training
When was toilet training launched? Which method was used?
How long did the child manage to stay dry during the day/night?
Does the child have encopresis or constipation?
Other factors
Have there been any changes in your child's life recently? (moving, death, a new baby, etc.)
How is the child doing at school?
How does the current problem affect the child's social life? (school, friends, activities, etc.)
What is the sleeping pattern of the child? Does the child have problems, such as snoring or difficulty in breathing?

gaining timely urination habits, bladder exercise, the use of reward system, and alarm treatment.

Scheduled urination – Waking up the child at night: Children should gain regular toilet habits. They should be encouraged to go to the toilet every two hours. During training, they should be informed that they should not hold the urine and that the bladder must be emptied before going to bed. In this way, bladder distension can be prevented. Also, children should be told that they have to go to the toilet several times at school, and the collaboration of teachers should be ensured. Families should be given training and counseling regarding these issues (Nevéus et al., 2020; Sinha & Raut, 2016).

Fluid Restriction: A fluid restriction program can be applied to ensure the child's adequate fluid intake during the day and to reduce nighttime urine buildup. First of all, the amount of fluid the child should take during the day is calculated. The majority of the fluid intake (about 80%) is adjusted to be given in the morning and afternoon. The remaining amount of fluid intake is given to the child after 5 p.m. If the

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child does not have a health problem such as sickle cell anemia, fluid restriction can be implemented in the evening (Nevéus et al., 2020; Toruner & Buyukgonenc, 2017). Nurses should closely monitor the intake-excreted fluid in children followed-up with enuresis. Also, the family should be trained on this issue.

Rewarding System-Calendar Method: It is a method that can be applied in different ways according to the age and development of the child and increase motivation. In young children, a star or a laughing sun sticker can be stuck on a calendar for the day or night the child is dry, or clouds or an umbrella sticker can be stuck on the calendar for a wet night. Children attending school may be asked to keep a written record. Successful days are counted after a certain time. At the beginning of the calendar method, realistic goals are set with the child. According to these goals, if the number of successful days is appropriate, the child is rewarded. It is important that the reward is appropriate for the child's age and development (Hockenberry et al., 2016; Sinha & Raut, 2016; Toruner & Buyukgonenc, 2017). In this way, rewards are given to increase the motivation of the child for the days when he/she has been dry, and the responsibility of the child for involuntary wetting is increased. In this method, a close cooperation with the family and the child is ensured. With this method, nurses achieve the goals by relieving the child, making the child feel the support of the family and nurses, and support the child that he/she can do it. This method has been determined to be approximately 15-20% effective in the treatment of enuretic children (Caldwell, Nankivell, & Sureshkumar, 2013).

Bladder exercise: The child is made to drink plenty of water and told to hold the urine as long as possible. Thus, the functional capacity of the bladder can be increased. It can be particularly effective in children who go to the toilet frequently, have a small bladder capacity, and have detrusor instability. When applied combined with alarm treatment, the bladder capacity improves, and the chance of success in treatment increases (Beckers, 2015; Toruner ve Buyukgonenc, 2017).

Alarm treatment: This treatment method is based on waking the child up with a bell or vibrator that is attached a sensor that is sensitive to wetness and placed under the child's underwear or under the sheet (Kuwertz-Bröking & von Gontard, 2018). Enuretic alarms are used to inhibit bladder emptying during sleep, to increase bladder capacity at night, and to awaken the child when there is a feeling of urination (Caswell et al., 2020). In evidence-based studies, it has been reported that alarm treatment has a higher chance of success and a lower rate of recurrence of the problem after treatment compared to groups with no treatment (Christophersen & Vanscoyoc, 2013; Apos et al., 2018; Kosilov et al., 2018). It has been determined that there is a success rate of 65-80% after a 5 to 12-week treatment and that a 35-55% success rate of staying dry is achieved after treatment (Apos et al., 2018; Caswell et al., 2020; Christophersen & Vanscoyoc, 2013; Evans, Malmsten, Maddocks, Popli, & Lottman, 2011).

Alarm treatment should be continued for at least 14 nights until dryness is achieved. If more than two bedwetting occurs within two weeks after treatment, alarm treatment can be resumed (Docimo et al., 2018; von Gontard & Kuwertz-Bröking, 2019). Training and counseling given to families by the

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nurse is important for the success of treatment. The family should be told that the person responsible for the alarm is the child and that the child should set and turn off the alarm. It should be noted that it is necessary to help the child to change the bed linen and clothes at night. Reasons for pausing alarm treatment generally include discomfort of family members and difficulties in using alarms or waking up the child. The child and the family should be motivated for treatment (Docimo et al., 2018).

2.3. Nursing management in the pharmacological treatment of enuresis

Desmopressin (DDAVP): Desmopressin is an analogue of vasopressin produced in the hypothalamus. Nocturnal ADH deficiency is observed in many patients who are followed up with a diagnosis of nocturnal enuresis. Therefore, it causes imbalances in urine production and dilute urine production at night. Enuresis occurs when the amount of urine exceeds the bladder capacity at night (Gasthuys et al., 2020).

The half-life of desmopressin used in the treatment of enuresis is 1.5-3.5 hours. It is used in oral or nasal forms. Studies indicate that desmopressin is effective in treatment and the success rate is as high as 70% (Docimo et al., 2018; Kim & Kwon, 2016, Ravanshad et al., 2017). The child's response to treatment should be evaluated within two weeks after starting treatment. The most important side effect of desmopressin is the hyponatremic water intoxication that develops when excessive fluid is taken with the drug (Silbert-Flagg & Pillitteri 2017). This risk is higher in the intranasal form due to its long half-life. Nurses should explain how to limit fluid intake during the use of the medicine use to families. The amount of fluid that should be taken during the day should be calculated. The amount of fluid taken with meals should not exceed 2 liters a day. Other side effects of the drug are headache, runny nose, nosebleed, abdominal pain, water intoxication, allergic reactions, hyponatremia, nausea, bad taste in the mouth, and vision problems. The nurse should explain the side effects of the drug and the importance of monitoring the child to the family. When medication is administered, blood pressure and daily weight should be monitored (Toruner & Buyukgonenc, 2017).

Anticholinergic Treatment: The anticholinergic drugs used in the treatment of enuresis are oxybutynin, tolterodine, and propiverine. Oxybutynin is the most commonly used in treatment. When the methods used in the first step of treatment fail, the anticholinergic drug group is used (Docimo et al., 2018).

The mechanism of action of this drug group increases the bladder capacity by preventing detrusor contractions. Studies have shown that desmopressin-oxybutin combined treatment is more effective than desmopressin treatment alone. On the other hand, Ghasemi Esteghamati Mohammadzadeh and Zare (2016) found that enuresis, incontinence, and urinary urgency occurred less in desmopressin treatment in the 1st and 3rd months after treatment compared to oxybutynin treatment.

Nurses should educate and counseling the family about how to administer the drug, its effects, and side effects. The full dose of the drug may be given before bedtime or half a dose in the afternoon and the other half at bedtime. It should be given with meals to reduce gastrointestinal disturbances. Constipation and residual urine volume should be monitored in children receiving anticholinergic treatment. The side

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effects of anticholinergic treatment, such as dry mouth, headache, blurred vision, facial flushing, and heat intolerance, should be followed up (Docimo et al., 2018; Geary & Schaefer, 2016).

Tricyclic Antidepressants: Tricyclic antidepressants (TCA) are employed as a tertiary treatment option in enuresis. Their use is recommended especially in treatment-resistant cases. The mechanism of action of this drug group includes relaxing the detrusor muscle with its weak anticholinergic properties, stimulating ADH secretion, and improving REM sleep time. Imipramine, amitriptyline, and desipramine are drugs in the tricyclic antidepressant group. Imipramine is the most commonly used TCA in the treatment of enuresis (Geary & Schaefer, 2016; Kabay et al., 2019). Before the treatment, a detailed physical examination and history should be taken in terms of cardiological system findings. Besides, the child's ECG should be evaluated. The initial dose of imipramine in children is usually 10-25 mg at bedtime, and in children aged 9 and older, the treatment dose can be increased within a safe range. Treatment should be continued for at least 3-6 months (Dahm & Dmochowski, 2018; Wheatley, 2018) In a cochrane review by Caldwell, Sureshkumar, and Wong, imipramine was found to be more effective in 20-33% of enuresis cases compared to placebo (Caldwell, Sureshkumar, & Wong, 2016). When combined with other methods, it increases the success of the treatment. Children and their families using imipramine should be trained about the possible side effects of the treatment. Nurses should observe the child well in terms of cardiac conduction disorders after drug treatment is administered. The family and the child should be provided with training and counseling in terms of other side effects of the treatment (urinary retention, dysuria, weight loss, blurred vision, palpitations, syncope, etc.) (Docimo et al., 2018).

2.4. Nursing management for the psychosocial effects of enuresis on the child and the family

Enuresis is a health problem that affects the child and the family psychosocially. Social shyness, high anxiety, falling academic achievement, and behavioral problems (twitches, stammering, encopresis, etc.) can be observed in children with enuresis problems (Demirci et al., 2016; Hamed et al., 2020; Huang et al., 2020). The problem experienced in some families is perceived as a serious situation, and families may blame themselves. On the other hand, there are families who do not consider enuresis as an important problem and neglect the child and do not realize the effects of the problem on the child. Determining the impact of enuresis on the family and the child is an important step in planning and success of treatment (Hockenberry et al., 2016).

The child and the parents should be helped to understand the problem and the treatment plan. With this respect, the training and counseling that nurses will provide to families is of great importance because the most important responsibility in the treatment of enuresis falls on the shoulders of the family. It is necessary to inform families that uncontrollable reasons may cause this problem and that they can manage this problem in the early period (Toruner & Buyukgonenc, 2017). They should be told that activities should not be postponed, they may use spare sheets or clothing, and that they should not blame the child and themselves. They should be informed about the prevention of the undesirable effects of enuresis and control techniques (plastic

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cover, washable sleep packs, use of diaper panties, etc.). Sharing emotions with the child, teaching better coping techniques, and spending quality time with the child during daytime activities can be important in solving the problem. Parents should be warned that methods such as condemnation and punishment have no place in the treatment. For this reason, nurses should inform, counsel, encourage, and support the family and the child with enuresis at every opportunity (Conk et al., 2018).

In the management of the psychosocial effects of enuresis on the child and family, the history about the toilet training given to the child should be taken well. Toilet training given without considering readiness can negatively affect the child and the parents psychosocially. At the same time, the methods and approaches used by the family in toilet training provide important data to nurses while they are making the planning for the child and the family (Hockenberry et al., 2016). Reasons, such as starting toilet training early, lack of readiness in the child and the parent, wrong attitudes of the parents (oppressive, authoritarian, etc.), and the use of punishment in training, may lead to the development of enuresis. For this reason, training of the family on toilet training is of great importance (Sundaram, 2020). During the training of parents, nurses should address the importance of the physical, psychological, and mental readiness of the child and psychological readiness of the parents and their efforts to allocate time for this process. It should be noted that there should be no punishment and coercion while giving toilet training to the child. Parents should be informed that these methods do not work in solving the problem and may create feelings of embarrassment, shyness, and fear in the child (Hockenberry et al., 2016; Toruner & Buyukgonenc, 2017).

3. Conclusion

Enuresis is a serious health problem that affects the child and the family psychologically and socially. Psychosocial and behavioral problems can be seen in children as the impact of enuresis. Families may blame themselves for the situation and have different attitudes and behaviors (repressive, punitive, etc.) towards the child. To eliminate enuresis and its effects, families should be provided with information, training, and support on how to manage this process. In this sense, nurses have significant responsibilities in the prevention of enuresis, evaluation of the existing conditions, and the management of the treatment and care. Nurses take active roles in the planning of care and management of treatment by taking detailed history and conducting physical examination in the evaluation of the child with enuresis problem. Nursing services are of great significance in evaluating the health effects of pharmacological and non-pharmacological treatments, guiding the family, and providing training and counseling. The chances of success in treatment and care increase with the nursing management of enuresis in line with the age-specific characteristics of the child and the needs of the family.

Conflicts of interest

No conflict of interest was declared by the author.

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