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# Enürezis Nokturnalı Çocuklarda Başvuru Yaşını Etkileyen Faktörler: Türkiye'nin Doğusundan Multisentrik Çalışma

# Factors Affecting the Age of Application in Children with Enuresis Nocturnal: A Multicentric Study from the Eastern of Turkey

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**ÖZ**

**Amaç:** Çocukluk çağında sık görülen enürezis nokturna tedavi edilmez ise önemli psikososyal sorunlara neden olabilir. Bu çalışmada enürezis nokturnalı çocukların polikliniğe başvuru yaşını etkileyen faktörlerin incelenmesi amaçlandı.

**Materyal ve Metot:** Çalışmaya beş ayrı merkezden hastalar dahil edildi. Hastaların yaşı, cinsiyeti, aile yapısı, yaşadıkları yer, annenin mesleki durumu, ebeveynlerin eğitim düzeyi ve gelir durumları hastane kayıtlarından ve telefonla ailelere ulaşılarak öğrenildi.

**Bulgular:** Çalışmaya dahil edilen 162 hastanın ortalama yaşı 9,41±3,24 yıl olup, 94'ü erkekti. Ebeveynlerinin eğitim düzeyi ve gelir düzeyi arttıkça hastaların polikliniğe başvuru yaşının anlamlı bir şekilde azaldığı tespit edildi. Ayrıca kentsel bölgede yaşayan hastaların kırsala nazaran daha erken dönemde hastaneye başvurdukları görüldü.

**Sonuç:** Ebeveynlerin eğitim düzeyi, yerleşim yeri ve gelir düzeyi gibi faktörler enürezis nokturnalı hastaların polikliniğe başvuru zamanı açısından önemlidir.

**Anahtar Kelimeler:** Çocuk, nokturnal enürezis, yaş

**ABSTRACT**

**Objective:** Enuresis nocturna, which is common in childhood, can cause significant psychosocial problems if left untreated. In this study, it was aimed to examine the factors affecting the age of admission to the outpatient clinic in children with enuresis nocturna.

**Materials and Methods:** Patients from five different centers were included in the study. The patients' age, gender, family structure, place of residence, occupational status of the mother, education level and income of the parents were obtained from the hospital records and by contacting the families by phone.

**Results:** The mean age of the 162 patients included in the study was 9.41±3.24 years, 94 of whom were male. It was found that as the education level and income level of their parents increased, the age of referring to the polyclinic decreased significantly. In addition, it was observed that patients living in urban areas applied to the hospital earlier than rural patients.

**Conclusion:** Factors such as the education level of the parents, place of residence and income level are important in terms of the time of admission to the outpatient clinic of patients with enuresis nocturna.

**Keywords:** Age, child, nocturnal enuresis

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## INTRODUCTION

Enuresis nocturna (EN), which has a history as old as human history, is involuntary incontinence at night when bladder control should be acquired.[1] Approximately five million children in the USA have been reported to suffer from enuresis. In terms of the frequency of EN, it was the second most common chronic disease after childhood allergic disorders.[2] In our country, it has been reported to occur with a high rate of 12.4%-25%.[3]

EN, in which many factors play a role in its etiology, can lead to important psychological and social problems if untreated.[4] These problems are not only limited to patients, but also impair the quality of life of parents.[1]

Although EN is a common problem, we have seen that most of the publications on this subject consist of the analysis of data obtained from the screening school age cases. Especially in scientific studies on EN in our country, we did not find any other study evaluating the effect of socio-economic and socio-cultural conditions such as education status, income level, family structure and place of residence of parents with these children at the age of admission to the polyclinic. Therefore, in this study, it was aimed to examine the factors affecting the age of admission to the polyclinic of children with EN in five centers, three of which are in the metropolitan area of our country.

## MATERIALS AND METHODS

Ethical approval was obtained from the local ethics committee for the study (Date: 16/04/2021, decision no: 2021/05-14). This work was carried out in accordance with the principles of the Declaration of Helsinki.

Between 15.09.2014 and 01.03.2021, five centers (Van Yüzüncü Yıl University Dursun Odabaş Medical Center Pediatric Surgery and Urology clinics, Van Regional Training and Research Hospital Urology clinic, Bingöl Obstetrics and Pediatrics Hospital Pediatric Surgery clinic and Muş Varto State Hospital Urology clinic) patients were included. The data of the patients were accessed from their files in the hospital system. The missing data were learned by calling the parents of the patients from the phone numbers obtained from the hospital automation system.

In the study, the age, gender, family structure of the mother, occupational status of the mother, place of residence, education level and income status of the parents were analyzed retrospectively. The education level of the parents was divided into six groups (illiterate, literate, primary school, secondary school, high school, and university). In terms of income levels, the minimum wage floor was divided into two groups as above or below. The places where they live were divided into two groups: urban-rural, family structure fragmented-whole, and finally, the professional status of the mother, housewife-employee. Patients whose data could not be accessed by telephone and who had co-morbid diseases and drug use affecting the urinary system were excluded the study.

***Statistical Analysis:*** Descriptive statistics for age; It is expressed as mean, standard deviation, minimum and maximum values, and expressed as numbers and percentages for categorical variables. Student T-test for comparing pairwise group averages in terms of age variable; One-way analysis of variance was used to compare the means of more than two groups. Following the variance analysis, Duncan multiple comparison test was used to identify different groups. Chi-square test was used to determine the relationship between groups and categorical variables. Statistical significance level was taken as 5% in calculations and SPSS (ver: 21) statistics package program was used for calculations. Statistical significance level was accepted as $p<0.05$.

## RESULTS

The mean age of the 162 patients included in the study was 9.41±3.24 years. 94 (58%) of the patients were men and the average age of the men was 9.48 ± 3.24 years; The number of girls was 68 (42%) and the mean age was 9.30±3.26 years (p=0.721). The education level of the parents of the patients was found to be higher in men than in women (p=0.001). Although all fathers in the study were at the least literate level, some mothers were illiterate (n:26). The age of referring to the EN outpatient clinic was significantly lower in children of parents with a high

**Table 1.** The effect of parents' education level on the age of application.

| | Level | Average | Min. | Max. | p |
|---|---|---|---|---|---|
| Mother Education Status | **Not literate** | 12.38±3.78 | 5.00 | 17.00 | 0.001 |
| | **Literate** | 11.37±2.67 | 5.00 | 16.00 | |
| | **Primary school** | 9.22±1.95 | 6.00 | 13.00 | |
| | **Secondary school** | 8.45±1.93 | 5.00 | 15.00 | |
| | **High school** | 6.80±1.69 | 5.00 | 12.00 | |
| | **University** | 6.00±1.69 | 5.00 | 10.00 | |
| | **Total** | 9.41±3.24 | 5.00 | 17.00 | |
| Father Education Status | **Literate** | 1.22±2.90 | 9.00 | 17.00 | 0.001 |
| | **Primary school** | 12.40±2.79 | 6.00 | 17.00 | |
| | **Secondary school** | 10.21±2.51 | 6.00 | 17.00 | |
| | **High school** | 7.66±1.69 | 5.00 | 12.00 | |
| | **University** | 5.85±1.26 | 5.00 | 10.00 | |
| | **Total** | 9.41±3.24 | 5.00 | 17.00 | |

Max: Maximum; Min: Minimum.

**Table 2.** Descriptive research results by age.

| | Level | Average | Min. | Max. | p |
|---|---|---|---|---|---|
| Geographical Locations | **Rural** | 10.33±3.62 | 5.0 | 17.0 | 0.003 |
| | **Urban** | 8.79±2.81 | 5.0 | 17.0 | |
| | **Total** | 9.41±3.24 | 5.0 | 17.0 | |
| Income Status | **<Wage Floor** | 0.59±3.073 | 6.0 | 17.0 | 0.001 |
| | **>Wage Floor** | 8.23±2.98 | 5.0 | 17.0 | |
| | **Total** | 9.41±3.24 | 5.0 | 17.0 | |
| Family Structure | **Piecewise** | 9.25±3.19 | 5.0 | 15.0 | 0.884 |
| | **Whole** | 9.42±3.25 | 5.0 | 17.0 | |
| | **Total** | 9.41±3.24 | 5.0 | 17.0 | |
| Mother Job | **Working** | 6.38±1.98 | 5.0 | 12.0 | 0.001 |
| | **Housewife** | 9.67±3.20 | 5.0 | 17.0 | |
| | **Total** | 9.41±3.24 | 5.0 | 17.0 | |

Max: Maximum; Min: Minimum.

level of education (Table 1).

The number of patients in the study was determined to be equal according to the income level (n=81, 50%). It was determined that as the income level increased, the age at applying for EN decreased (p=0.001, Table 2). In parallel with this, it was observed that children whose mothers were working were brought to the outpatient clinic earlier (p=0.001). It was determined that most patients lived in urban areas (n=97, 59.9%), while less of them lived in rural areas (n=65, 40.1%). It was observed that the patients living in urban areas presented to the hospital earlier than those in rural areas (p=0.003). There were eight (4.9%) patients with a fragmented family structure in the study. There was no effect of fragmented family structure on EN (p=0.084).

## DISCUSSION AND CONCLUSION

The frequency of EN in boys is higher than in girls.[1,2] It has been reported that the reason for this is that girls mature earlier than boys and have faster continence.[1] The fact that the majority of the patients in our study were male supports this statement, and its incidence is also similar to the literature.

The education level of the parents affects the time to apply for EN. In many studies, it was reported that the perspective of this disease changed with the increase in the education level of parents and they applied to the hospital for treatment in the early period.[1,5,6] In our study, a statistically highly significant difference was found between the education level of the parents and the time of application of the children with EN. It was found that as the education level of the parents increased, the age of appli-

cation decreased significantly. In the light of all these data, we can say that the higher the education level, the sooner family notice and care about EN.

There are many studies in the literature that found that families with low income have more children with EN.[1,3,5-7] In addition, whether the parent employment status contributes to the income level of the family; There have also been studies suggesting that this changes the socio-cultural lifestyle and thus affects the prevalence of EN.[1,7] Similar to these studies, in our study, it were revealed that families with high income levels were referred to the outpatient clinic earlier. The fact that our study consists of a patient group made in the easternmost provinces of Turkey and that this region consists of a family structure with a lower income level than other regions of Turkey revealed this relationship was highly significant.

In children of working mothers, it is observed that the age of EN application is earlier than the children of housewives.[6] This situation can be explained by the higher education level of most working mothers. In addition, in parallel with these data, the contribution of working mothers to the household budget will increase the socio-economic level and reduce the age of EN application in line with the literature.

The divorce of parents, the death of one or both parents were more common in children with EN. The reason for this is that the fragmented family structure is an important stress factor that disrupts the psychosocial development of the child.[7-8] Although the fragmented family structure affects the frequency of EN. In our study, it was observed that EN did not affect the application time.

In a study by Bilal et al.[5], it was reported that those living in rural areas had EN more frequently than those living in urban areas. In our study, it was found that most of the patients coming from rural areas brought their children to the polyclinic later. This situation can be explained by the low education level of the parents living in rural areas and insufficient health facilities that can be applied in rural areas.

As a conclusion, enuresis nocturnal is a common health problem. EN application time is closely related to the education level and income of the parents. In terms of the time of EN application, it is of great importance to investigate the existing causes and to eliminate preventable factors. It is important to inform parents about EN treatment, to make school screenings to identify cases that cannot be diagnosed, and to raise awareness of the public by using visual and printed media. In addition, we believe that informing family physicians, who have a great role in the management of this common problem in society, will be more beneficial in terms of early diagnosis and treatment. As far as we can see in our study, the only limitation is that we question whether there are other children with EN in families.

***Ethics Committee Approval:*** Ethical approval was obtained from the local ethics committee for the study (Date: 16/04/2021, decision no: 2021/05-14). This work was carried out in accordance with the principles of the Declaration of Helsinki.

***Conflict of Interest:*** The authors declare that they have no competing interest.

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