

# Clinical Features of Children with Encopresis and Their Comorbid Psychiatric Disorders

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## ÖZET

### Enkoprezisli Çocuklarda Klinik Özellikler ve Komorbid Psikiyatrik Hastalıklar

**Amaç:** Çalışmada enkoprezis tanısı konulan çocukların klinik özelliklerinin, komorbid bozukluklarının araştırılması; enkoprezis tipi ile komorbid bozukluklar arasındaki ilişki ve uygulanan tedavi tipi ile tedavi uyumu arasındaki ilişkilerin saptanması amaçlanmıştır.

**Yöntem:** Karadeniz Teknik Üniversitesi Tıp Fakültesi Çocuk ve Ergen Psikiyatrisi Kliniği'ne Temmuz 2005 - Haziran 2007 yılları arasında 4 yaşın üzerinde kaka kaçırma şikâyeti ile başvuran çocuklar çalışma grubunu oluşturmaktadır. Hastaların klinik dosyaları geriye dönük olarak gözden geçirilmiştir.

**Bulgular:** Kaka kaçırma şikâyetiyle bölümümüze başvuran 107 hastaya [83 erkek, 24 kız] Ruhsal Bozuklukların Tanısal ve İstatistiksel El Kitabı'nın Dördüncü Basımı'na göre enkoprezis tanısı konulmuştur. 107 vak'ının 22'si [%20.6] primer enkoprezis, 85'i [%79.4] sekonder enkoprezistir. Hastaların 74'ünde [%69.2] en az bir komorbid bozukluk bulunmaktadır. Sekonder enkoprezisli hastalar anlamlı oranda daha yüksek komorbiditeye sahiptirler [p=0.039]. Hastaların %44.9'una davranışçı tedavi, %18.7'sine psikofarmakolojik tedavi, %36.4'üne kombine tedavi uygulanmıştır.

**Tartışma ve Sonuç:** Enkoprezis çocuğun sosyal, duygusal, eğitimle ilgili gelişimini etkileyen yıkıcı bir bozukluktur. Bu çalışma enkoprezisli çocuklarda davranışsal ve duygusal problemlerin yüksek düzeyde olduğunu göstermektedir. Enkoprezis sıklıkla psikiyatrik hastalıklarla birlikte görülmektedir. Klinisyenlerin enkoprezisli çocuklardaki diğer psikiyatrik hastalık semptomlarını araştırmaları gerekmektedir.

**Anahtar Kelimeler:** enkoprezis, çocuk, komorbidite

## ABSTRACT

**Objective:** The aim of this study is to present the clinical features of children with encopresis, their comorbid psychiatric disorders, the relation between types of encopresis and comorbid psychiatric disorders and the relation between the suggested treatment type and continuation of treatment.

**Method:** The study population consisted of children who were older than 4 years and referred to the Karadeniz Technical University Faculty of Medicine, Department of Child and Adolescent Psychiatry Clinic with soiling, between July 2005 and June 2007. Clinical charts of patients with fecal soiling were examined retrospectively.

**Findings:** Of a group of children who were referred to our department with a complaint of soiling, 107 [83 boys, 24 girls] were found to fulfill the diagnostic criteria for encopresis according to

Diagnostic and Statistical Manual of Mental Disorders, 4th Edition. Of the 107 participants, 22 [20.6%] had primary encopresis and 85 [79.4%] had secondary encopresis. 74 [69.2%] of the patients met the criteria for at least one comorbid disorder. The patients with secondary encopresis had a significantly higher rate of comorbidity [ $p=0.039$ ]. Behavioral treatment was provided to 44.9% of the patients, psychopharmacologic treatment was given to 18.7% and a combined treatment was provided to 36.4% of the patients.

**Discussion and Conclusion:** Encopresis is a disruptive impairment that may affect a child's social, emotional, and educational development. Encopresis is frequently accompanied by a psychiatric disorder. This study shows significantly high rates of behavioral and emotional problems in children who soil. Clinicians need to inquire about symptoms of other psychiatric disorders in patients who present with encopresis.

**Keywords:** encopresis, child, comorbidity

## INTRODUCTION

Problems of continence in childhood are common and generate a great deal of distress. Encopresis is generally defined as the repeated involuntary or intentional passage of feces in inappropriate places with at least one such event a month for at least 3 months. The child must be at least 4 years of age, and the disturbance must not be due to a physical disorder. The encopresis is called primary or secondary, if the child has never been clean or has regressed to incontinence after at least 12 months of cleanliness, respectively, according to Diagnostic and Statistical Manual of Mental Disorders, 4th Edition [DSM-IV] (American Psychiatric Association 1994). Psychological factors have often been implicated in the development of soiling (Fishman et al 2003, Joinson et al 2006).

The incidence is about 1.5% in a between 7 to 8 years of age (Bellman 1966), and greater in clinical populations, e.g., about 3% in general outpatient clinics (Levine 1975). Remission generally comes with the passage of time, spontaneously or due to treatment; encopresis is unusual after 16 years of age (Rex et al 1992).

Fecal soiling was significantly associated with a diagnosis of psychiatric disorder, being more than three times more common in boys who soiled than in boys

who did not; and more than eight times more common in girls who soiled than those who did not. There are several good reasons why psychological disturbance might be associated with encopresis. There might be a genetic link. The family factors might give rise both to soiling and to disturbance. Also psychological disorders might give rise to soiling in principle (Clayden and Taylor 2002).

In this study we aimed to present comorbid psychiatric disorders in children with encopresis, their clinical features, the relation between types of encopresis and comorbid psychiatric disorders. We also examined the relation between the treatment type suggested by the clinicians and continuation of treatment and follow-up.

## METHOD

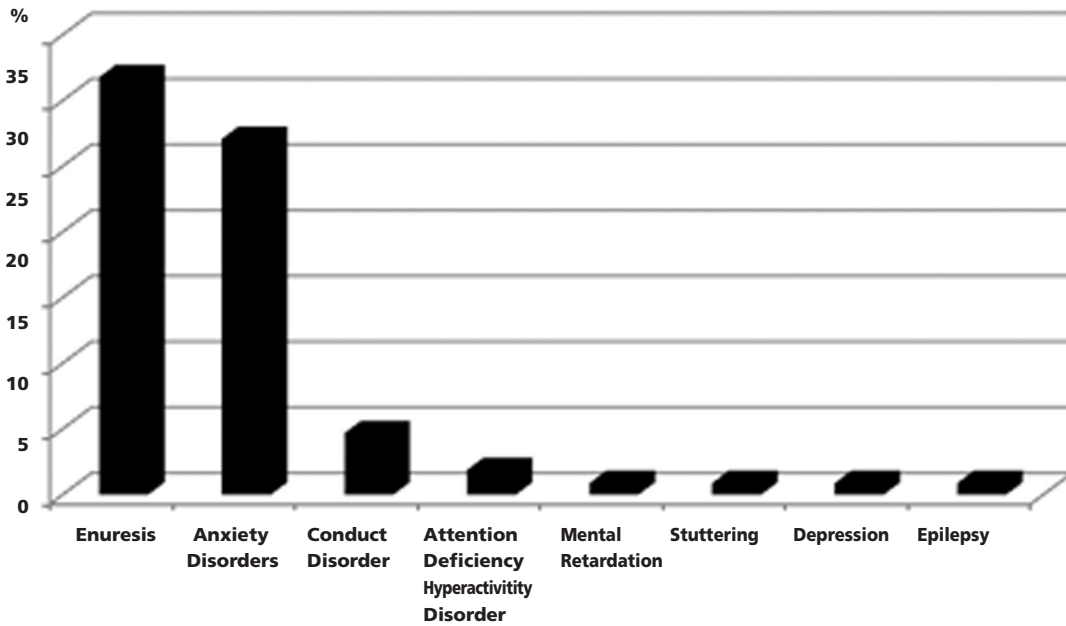
The study population consisted of children who were older than 4 years and referred to the Karadeniz Technical University Faculty of Medicine, Department of Child and Adolescent Psychiatry Clinic with soiling, between July 2005 and June 2007. Clinical charts of patients with fecal soiling were examined retrospectively and those who were found to have an organic cause for defecation problems were excluded.

**Table 1. Sociodemographic Characteristics**

	Mean age (years)		Education (years)	
	X	SD	X	SD
Child-adolescents	7.6	2.1	4.3	5.0
Mothers	33.5	5.5	6.0	2.8
Fathers	38.7	6.7	5.9	3.2

X: mean, SD: standard deviation

Figure I. Comorbid disorders



Statistical analysis was performed with SPSS 13.0 for Windows. A chi-square test was performed to examine the relation between type of encopresis, sex and the existence of a comorbid disorder, and also to examine the relation between the type of the treatment offered and the continuity of the treatment and follow-up. To examine the relation between comorbidity and ages of the patients with encopresis, the Student's t test was used. All test values were considered significant at p less than 0.05.

## FINDINGS

Of a group of children who were referred to our department with a complaint of soiling, 107 [83 boys, 77.6%] and 24 girls, 22.4%, mean age=7.6 years, Standart Deviation [SD]=2.2, range 4-15] were found to fulfill the diagnostic criteria for encopresis according to DSM-IV (American Psychiatric Association 1994). Eight of the patients in the study [7.5%] were preschoolers, 75 [70.1%] were primary school students, three [2.8%] were secondary school students, and one [0.9%] was a high school student. 16 of the participants were [15.0%] school leavers and two of the participants were [1.9%] taking combined training including a special training for mental retardation and also still continuing to normal community school and only two children [1.9%] had no education.

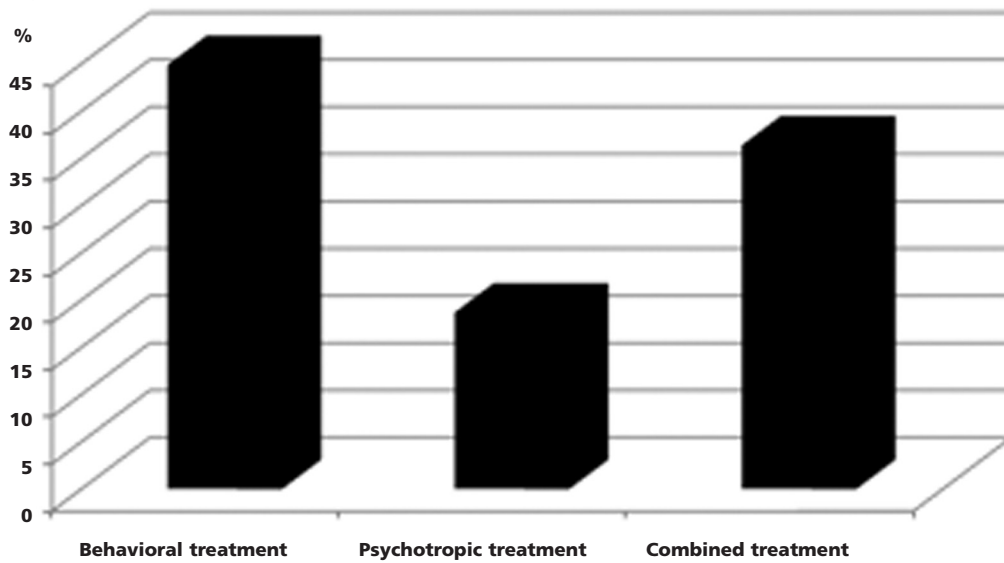
Of the mothers of the participants, one [0.9%] was illiterate, two [1.9%] were uneducated but literate, 84 [78.5%] were primary school graduates, 15 [14.0%]

were high school graduates and five [4.7%] were university graduates. Majority of the mothers [90.7%] were housewives. Of the fathers of the participants, one [0.9%] was uneducated but literate, 67 [62.6%] were primary school graduates, 21 [19.6%] were high school graduates and 18 [16.8%] were university graduates [Table 1]. 98 [91.6%] of all the participants have both parents living and 99 [92.5%] of them had two or more siblings. Majority of the participants [85.0%] were coming from low-income families.

Of the 107 participants, 22 [20.6%] had primary encopresis and 85 [79.4%] had secondary encopresis. The mean age of patients with primer encopresis was 6.3 years [SD=2.2], and the mean age of patients with seconder encopresis was 7.9 years [SD=2.2].

74 [69.2%] of the patients met the criteria for at least one comorbid disorder. Of the 107 patients with encopresis, 34 [31.8%] had enuresis, 29 had anxiety disorders [27.1%], five had conduct disorder [4.7%], two had attention deficit hyperactivity disorder [ADHD] [1.9%], one had mental retardation [0.9%], one had stuttering [0.9%], one had depression [0.9%], and one had epilepsy [0.9%]. Existence of a comorbid disorder is shown in figure I. There was no comorbid diagnosis in 33 [30.8%] patients. Of the patients with primary encopresis, 66.7% had a comorbid disorder. On the other hand, 85.1% of the patients with secondary encopresis had a comorbid disorder. The patients with secondary encopresis had a significantly higher rate of comorbi-

**Figure II. Treatment modalities**



dity [ $p=0.039$ ]. Moreover, there was no significant difference in the comorbidity rates of girls and boys. There was a significant positive correlation between comorbidity and age [ $p=0.049$ ]. The mean age of the patients with no comorbid disorder was 7.03 [ $SD=2.02$ ], whereas the mean age of the patients with at least one comorbid disorder was 7.92 [ $SD=2.18$ ]. There was no significant correlation between comorbidity and the parent's ages [for mothers' ages  $p=0.151$  and for fathers' ages  $p=0.644$ ]. There was also no significant cor-

relation between comorbidity and the parent's education level [for mothers  $p=0.415$ , and for fathers  $p=0.484$ ].

Behavioral treatment was provided to 44.9% of the patients, psychotropic treatment was given to 18.7% and a combined treatment was provided to 36.4% of the patients [Figure II]. There was no statistically significant dependence of the continuity of the treatment on the economic conditions of the patients [ $p=0.447$ ]. There was also no significant dependence of the continuity of the treatment on the education of patients' parents [ $p=0.829$ ].

**Figure III. Life Stressors**

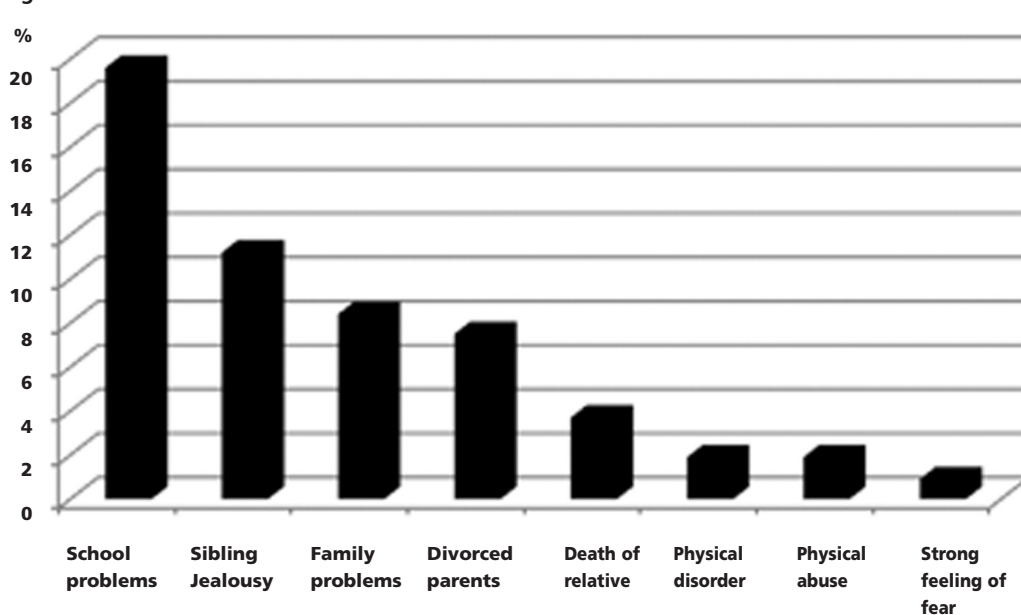
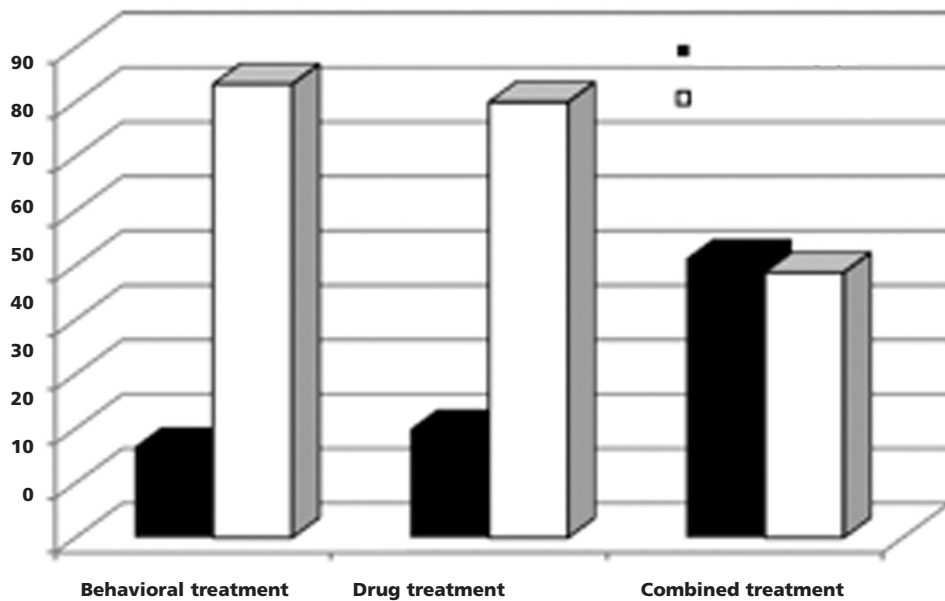


Figure IV. Continued and Discontinued to Treatment



No pharmacologic treatment was given to 48 [44.9%] patients. 51 [47.7%] patients received imipramine, five [4.7%] patients received SSRI, two received an antipsychotic [1.9%], and one received an anxiolytic [0.9%]. Of the patients receiving imipramine, 27 [52.9%] discontinued the treatment, 10 [19.6%] showed complete recovery, and six [11.8%] had partial recovery. Seven [13.7%] patients did not respond to treatment, and one [2.0%] had recurrence [it means recurrence of symptoms after cleanliness during six months in this study] of encopresis.

Forty eight (44.9%) of the patients did not have any identified life stressor, 21 [19.6%] had some school problems, 12 [11.2%] had sibling jealousy, nine [8.4%] had family problems, eight [7.5%] had divorced parents, four [3.7%] experienced the death of a close friend or relative, two [1.9%] had a physical disorder, two [1.9%] experienced a physical abuse, and one [0.9%] patient had a strong feeling of fear [Figure III].

Of the patients who were offered a behavioral treatment, 16.7% continued the initial treatment during the follow-up period and 83.3% discontinued the treatment. Of the patients who were offered a drug treatment, only 20.0% continued the initial treatment and 80.0% discontinued the treatment. Of the patients who were offered both behavioral and medical treatment, 51.3% continued the initial treatment and 48.7% discontinued [Figure IV].

## DISCUSSION

Encopresis is a disruptive impairment that may af-

fect a child's social, emotional, and educational development (Bellman 1966, Essen and Peckham 1976). It is estimated to afflict 1% to 3% of the general pediatric population (American Psychiatric Association 1994, Baker et al 1999, Clayden and Taylor 2002). The larger proportion of primary encopresis may result from a younger referral population (Loening-Baucke 1993). For our study, the mean age of patients with primer encopresis was 6.3 years [SD=2.2], and the mean age of seconder encopresis was 7.9 years [SD=2.2]. The rate of soiling was significantly more common in boys than girls (Clayden and Taylor 2002, Hansen et al 1997, Joinson et al 2006, Van der Wal et al 2005). Our study also shows encopresis is more common in boys than girls.

In our study, the mean age at admission was found to be related with the absence of comorbid disorders. The mean age at admission was lower in the patients with no comorbid disorder. Early referral to hospital may gets early beginning to treatment and early prevention to accompany of other comorbid disorders. This finding does not agree with the results of the work done by Unal and Pehlivanürk (2004).

The findings of the present study suggest that most of the patients [69.2%] with encopresis had comorbid psychiatric disorders. Some of these disorders were seen more frequently than they are seen in the general population. Enuresis was the most frequent comorbid disorder [31.8%]. These results are comparable with the previous reports; most of the studies that evaluated



the comorbidity of enuresis and encopresis reported similar rates (Unal and Pehlivanürk 2004). Comorbid diagnoses with disruptive behavior patterns like attention deficit hyperactivity disorder [1.9%] and conduct disorder [4.7%] were also present in our series. It is known that encopresis may be associated with other neurodevelopmental problems including easy distractibility, short attention span, low frustration tolerance, hyperactivity and poor coordination (Mikkelsen 2000). In a study, children with encopresis had significantly more attention problems and rated higher on the subscales measuring delinquent behavior when compared with nonsymptomatic children (Cox et al 2002).

Foreman and Thambirajah (1996) specifically looked at associated psychopathology in boys with primary encopresis, compared with those with secondary encopresis. They found that the children with primary encopresis were more likely to have experienced developmental delays and to have associated enuresis, whereas those with secondary encopresis had experienced more psychosocial stressors and had higher rates of associated conduct disorder. In our study the patients with secondary encopresis had a significantly higher rate of comorbidity and had higher rate of comorbid enuresis. But anxiety disorders had also higher rate in this group. This might show that may be the encopresis causes the anxiety disorders or vice versa.

In our study, a statistically significant difference was found in the rates indicating a dependence between the treatment type and continuity of the treatment [ $p=0.01$ ]. This shows us that, in our region, when patients come to doctor, they may not be satisfied without taking some drugs. On the other hand, when given alone, the patient somehow terminates the drug treatment after some period of time. These indicate that, in our region, combining the behavioral treatment with drug treatment increases the likelihood of treatment adaptation of the patients. Pharmacological treatment has not played a significant role in the treatment of encopresis (Mikkelsen 2001). Over the years there have been 15 reported cases of children with encopresis responding to imipramine (Mikkelsen 1996), and there was a recent similar report with amitriptyline (Dossetor et al 1998). In our study, there was only one case showing a complete recovery by receiving imipramine only. Using behavioral treatment in addition to imipramine, nine patients had a complete recovery, which shows the fact that in the treatment of encopresis; the behavioral treatment is the main treatment method.

In addition, Joinson et al (2006) also reported an association between soiling and having highly stressful

life events. In our series most of the children also had a history of a stressful life event [55.1%].

## CONCLUSION

This study shows significantly high rates of behavioral and emotional problems, and antisocial activities in children who soil. In summary, encopresis is frequently accompanied by a psychiatric disorder. Clinicians need to inquire about symptoms of other psychiatric disorders in patients who present with encopresis and vice versa.

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