

## Behavioral problems of encopretic children and their familial characteristics

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### Summary

**Aim:** The aim of this study was to assess behavioral problems in children with encopresis as well as anxiety levels of the mothers and marital problems of the parents.

**Material and Method:** The case group included 31 boys with encopresis and their mothers; the control group included 26 boys who did not have chronic disease and their mothers. Child Behavior Checklist (CBCL), Trait Anxiety Inventory (STAI-II) and Marital Conflict Questionnaire (MCQ) were used. The mean scores of the scales of the two groups were compared by Mann-Whitney U test (ethics committee no: 17.12.2007/34516).

**Results:** CBCL total problem scores, externalization, aggressive behavior, delinquent behavior and attention problem scores were significantly higher; CBCL competency total scores and school scores were significantly lower in the case group. In addition, MCQ scores were significantly higher in the encopresis group. Maternal STAI-II scores did not differ significantly between the groups.

**Conclusions:** Attention and behavior problems may be the target of interventions for treatment of encopresis in children. Treatment of these problems may increase treatment compliance and prevent conflicts that may occur within the family in relation to these problems. Addressing severe marital problems which may be a source of distress and which may worsen the course of treatment may contribute to the treatment of these children. (*Turk Arch Ped 2012; 47: 35-9*)

**Key words:** Anxiety, behavioral problems, children, encopresis, family

### Introduction

Encopresis is defined as fecal soiling in inappropriate places which is mostly involuntary and sometimes voluntary (1). It has been reported that encopresis occurs in 2,8% of children of 4 years of age, in 1,9% of children of 6 years of age and in 1,6% of children of 10 years of age (2). It is observed 3-fold more frequently in boys compared to girls (3). The term primary encopresis is used for cases in which the problem is present from the birth and accompanied by growth retardation and enuresis. The term secondary encopresis is used for cases in which encopresis usually starts after a compelling life experience (4).

It has been reported that anxiety, depression, attention and behaviour problems are observed more frequently, school success is lower than the general population (5) and CBCL total problem scores are higher in children with encopresis (6). Common comorbidities in encopresis include enuresis (55,2%), oppositional defiant disorder (30,8%), childhood masturbation (6%), mental retardation (5%), anxiety disorders (3,5%) and

behavior disorder (3%) (7). Difficult personality traits in the child has been reported to lead to conflict between the parents and the child and problems in toilet training. It has been suggested that children who have not been able to complete their toilet training or who refuse to sit on the toilet have a more difficult personality (8) and difficult personality is an early indicator of bowel regulation problems and problems of internalization and externalization (9).

In addition to difficult mood, compelling life experiences and conflict between the parents and the child have also been reported to be associated with encopresis (4,8). Considering this information it has been assumed that behaviour disorders will be observed with a higher rate, the mothers will have a higher level of anxiety and marriage problems will be more frequent and severe in children with encopresis. In our study, it was aimed to examine psychological and behavioral problems, the levels of anxiety of the mothers and marriage problems of the parents with appropriate materials in children with encopresis in line with these assumptions.

## Material and Method

31 boys with a diagnosis of encopresis made according to DSM-IV-TR criteria who presented to the outpatient clinic of child and adolescent psychiatry between 2008 and 2010 consecutively and their mothers were included as the study group. The first complaint at presentation was encopresis in all these children. The diagnosis of encopresis was made by clinical interview and no structured interview was performed. The control group was composed of 26 boys who presented to the outpatient clinic of the department of pediatrics and had no chronic disease with similar characteristics as the study group in terms of age and socioeconomical level. The diagnosis of the children in the general pediatric outpatient clinic is upper respiratory infection. Care was taken that no disease state which could prevent or affect the interview with the child was present. If necessary, the interview was performed on another day. Before the study approval was obtained from Cerrahpaşa Medical Faculty Ethics Committee (17.12.2007/34516). Families who participated in the study signed the informed consent form. To prevent mental retardation to affect the results WISC-R (10,11) test was performed in children in whom mental retardation was suspected and children with a score below 70 were excluded from the study. Children with a digestive system disorder, with a diagnosis of nervous system disease and muscle disease and with a chronic disease were excluded from the study considering that their physical disorders may affect the study results. During the study, three children were excluded because of gender criterion, four children were excluded because of mental retardation, three children were excluded because of physical disorder and two children were excluded because their parents did not wish to participate in the study.

**CBLC (Child Behavior Checklist/4-18):** This checklist was developed to determine the social ability areas and behavior problems of children and adolescents in line with information obtained from the parents (12). Validity and reliability of the Turkish version of this scale was established by Erol et al. (13).

**State-Trait Anxiety Inventory (STAI-II):** This is a self-assessment scale including two separate subscales of 20 items (14). STAI-I measures state anxiety level and STAI-II measures continual anxiety level. Validity and reliability study was done by Öner et al. (15). In our study, STAI-II scale was used.

**Marriage Conflict Scale:** This scale which was developed by Hatipoğlu (16) is composed of 70 items on subjects including communication, relations with friends and relatives, children, work, economy and sex for marriages which are found to have a high possibility of conflict. Two different scores as score of prevalence and frequency are obtained.

**Statistical evaluation:** The data obtained were evaluated by SPSS 13 (Statistical Package for Social Sciences) package program. The frequency and mean values were calculated. Mean scores of the groups obtained in the scales were compared by Mann-Whitney U test. A p value of <0.05 was considered to be significant in all analyses.

## Results

The mean age of the children with encopresis and the children in the control group were  $9,13 \pm 2,45$  and  $9,23 \pm 1,21$  years, respectively and there was no significant difference between the two groups (Student's t testi,  $p=0,85$ ). There was no difference between the study and control group in terms of family integrity (Fisher Exact Test,  $p=0,24$ ). 48,4% of the study group ( $n=15$ ) had primary encopresis and 51,6% ( $n=16$ ) had secondary encopresis. Encopresis was observed as fecal soiling in 80,6% ( $n=25$ ) of the cases and as complete encopresis in 19,4% of the cases ( $n=6$ ). In approximately one third of the children in the study group (32,3%), the comorbidity of enuresis was found. In the control group, this rate was 7,7% and the difference between the two groups was statistically significant ( $\chi^2=5,12$ ,  $p=0,23$ ). Enuresis was observed with a higher rate in cases of primary encopresis compared to cases of secondary encopresis (40% and 25%, respectively), but the difference was not statistically significant (Fisher's exact test,  $p=0,46$ ). CBLC scores of the study and control groups are shown in Table 1.

There was no significant difference between the study and control groups in terms of anxiety, depression, introversion and somatization scores in the area of internalization disorders. On the other hand, total score, aggressive behavior, delinquent behavior and attention problems scores in the area of externalization problems were higher in the study group. CBLC sufficiency scale total scores and school scores in the sufficiency part were lower in the study group. There was no significant difference between the two groups in terms of efficiency and sociability (Table 2).

Marriage conflict scale prevalence scores and marriage conflict scale mean frequency scores were higher in the group with encopresis. There was no difference between the two groups in terms of STAI-II scores (Table 3).

## Discussion

When elimination disorders are evaluated in terms of comorbidities, high rate of enuresis is compatible with the literature (4,6,7). Although the comorbidity of enuresis was reported with a higher rate in patients with a diagnosis of primary encopresis compared to patients with secondary encopresis in a study, no difference was found between the two groups in our sample. This may be related to the difference in mean age and the sample size (4).

In previous studies, it was reported that children with encopresis had significantly lower scores in subscales of attention problems, delinquent behavior, social problems and anxiety/depression in CBLC compared to the controls (5). In accordance with this finding, oppositional defiant disorder (ODD), attention deficit-hyperactivity disorder (ADHD) and behavior disorder (BD) are frequently associated with encopresis (7). In line with the literature, scores of

**Table 1. Statistical comparison of the CBCL<sup>1</sup> problem scores of children with encopresis and of the control group**

ÇDDÖ <sup>1</sup> subscales	Children with encopresis (n =31)	Controls (n=26)	Z value	p value
Internalization problems	63.26±10.18	59.69±9.77	-1.24	0.214
Anxiety /depression	65.03±10.10	61.27±8.91	-1.58	0.113
Social introversion	59.45±10.07	58.69±8.65	-0.12	0.909
Physical complaint	57.55±7.81	56.15±6.27	-0.66	0.507
Externalization problems	62.74±8.62	51.27±8.87	-4.44	<0.001
Agressive behavior	63.23±9.75	54.31±8.00	-3.80	<0.001
Delinquent behavior	59.55±9.03	53.00±5.51	-2.95	0.003
Social problems	59.74±8.96	56.15±8.20	-1.82	0.068
Thought problems	63.55±8.57	60.88±7.99	-0.86	0.391
Attention problems	65.35±9.79	56.12±7.81	-3.97	<0.001
Sexual problems	58.27±10.24	53.18±6.40	-1.82	0.069
Total problems	65.23±9.30	56.03±10.19	-3.39	0.001

<sup>1</sup>Child Behavior Checklist**Table 2. Statistical comparison of CBLC<sup>1</sup> sufficiency scores of the children with encopresis and the control group**

CBLC <sup>1</sup> - SSC	The group with encopresis (n=31)	Control group (n=26)	Z value	p value
Total	39.11±9.32	45.85±7.41	-2.79	0.005
Efficiency	39.65±9.19	43.88±8.08	-1.79	0.073
Sociability	41.77±9.20	45.81±6.82	-1.56	0.119
School	39.46±7.44	49.50±4.25	-4.55	<0.001

<sup>1</sup>Child Behavior Checklist – Sufficiency Subscales**Table 3. Comparison of continual anxiety scores of the mothers and frequency and prevalence scores of marriage conflict of the parents of the children with encopresis and the control group**

	The group with encopresis (n=27)	Control group (n=26)	Z value	p value
MCS1-P	12.89±9.91	4.96±5.83	-3.03	0.002
Marriage conflict scale 2- F	1.75±0.66	1.28±0.97	-2.38	0.017
	Encopretic group (n=31)	Control group (n=26)	Z value	p value
DSKE <sup>2</sup> -S	48.00±6.66	47.88±5.85	-0.11	0.910

<sup>1</sup>Marriage conflict scale Prevalance, 2 Marriage conflict scale -Frequency 3 State-Trait Anxiety Inventory- Continual score

externalization, attention, aggressive behavior and delinquent behavior were found to be higher in children with encopresis compared to the controls in our study. However, no difference was found between the two groups in terms of subscales of social problems and anxiety/depression in our study in contrast to previous studies.

It has been suggested that sitting on the toilet and hygiene procedures are among the main principles of encopresis treatment and treatment of attention problems will provide compliance to hygiene and exercises for sitting on the toilet by rendering the children more sensitive to internal stimuli including bowel movements (5). Kuhn et al (17) reported that

externalization problems should be treated independent of the order of psychological problems and encopresis, because externalization problems affected the child's compliance to treatment. This was also emphasized in two case presentations which reported methylphenidate use was beneficial in treatment of encopresis (18,19).

It is thought that encopresis may be associated with conflict between the parents and child and low educational and social function level which is observed frequently in ADHD and methylphenidate treatment may provide improvement in encopresis secondary to improvement in ADHD symptoms (18). Joinson et al.(2) reported that children with retardation in areas of

communication and social ability experienced defecation problems more frequently. In our sample, social function sufficiency scores of the children with encopresis were similar to the control group. On the other hand, significantly lower total sufficiency scores in children with encopresis compared to the control group support the results of the study performed by Joinson et al.(2). Treatments focused on attention and behavior problems may decrease encopresis symptoms in these children and may lead to improvement in the area of sufficiency.

Bemporad and Hallowel (10) defined the mothers of encopretic children as neurotic. Taichert (21) reported that encopresis might increase distress and anger of the mother and child, disturb the functionality of the family and this might lead to the continuum of conflict between family members. It was reported that the risk of defecation problems is high in the future in children whose mothers experience anxiety and depression during the period of the child's toilet education (2). It was stated that a part of children with encopresis might not have taken, might have refused or forgotten the treatment recommended at the first presentation and the attitude of the families on this subject should be examined (22). In some studies, it was reported that encopresis might be considered as a psychosomatic disorder (23), marriage problems were observed frequently in families of children with psychosomatic symptoms and physical symptoms played a role in distracting the family from conflict and in providing the balance of the family (24-26). Familial factors are observed to be significant in occurrence and maintenance of encopresis. The results of our study showed that the mothers of children with encopresis were not more anxious compared to the controls, but they had marriage problems with a higher rate compared to the controls. Since encopresis is a disorder which may lead to distress in the whole family, it may be considered that marriage problems occur related to the disruption of the family's general functionality by encopresis symptoms. However, it has been reported in the literature that familial factors prevent treatment compliance and play a role in maintenance of the symptoms (20,22). Because of high risk of comorbidity and chronicity and insufficiency of behavioral treatment methods in many cases the significance of family focused approaches has been emphasized (27). There are many studies indicating that marriage problems lead to internalization and externalization problems in children (28-30). When this is considered, treatment approaches focused on intrafamilial relations may lead to improvement in problems which are indicated by CBLC problem and sufficiency scores in children with encopresis. New researches addressing specifically this subject in later studies may increase our knowledge about the occurrence and treatment of encopresis.

Our study which addressed psychological and behavioral problems of encopretic children on whom relatively few information is found in the literature is the first study which examined sufficiency scale scores, the anxiety levels of the mothers and the marriage problems in the family as far as we know. However, our study did have some limitations. Since the diagnostic evaluation was not performed by structured interviews, categorical comorbidities were not defined and the symptoms were only evaluated dimensionally. In addition, only boys were

included in the study to eliminate the effect of gender variable on the study, since encopresis is observed more frequently in boys. This prevented obtaining information about the features of encopresis and family structure in girls. Another limitation of the study was the relatively low number of subjects. Since children with mental retardation and girls were excluded from the study, the number of subjects remained low. As a result of the research attention and behavior problems were found with a higher rate in boys with encopresis which was compatible with the literature. In contrast to what was expected, the anxiety levels of the mothers of children with encopresis were found to be similar to the controls. On the other hand, it was found that marriage problems were more frequent and more widespread in the families of children with encopresis. Based on these results it can be suggested that addressing attention and behavior problems of children with encopresis and integrative approach to the family are significant in terms of providing compliance to treatment and regression of symptoms.

**Conflict of interest: None declared.**

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