

# The Effects of Maternal Depression on Children with Primary Monosymptomatic Nocturnal Enuresis

✉ Bahar Çaran<sup>1</sup>, Duygu Hacıhamdioğlu<sup>2</sup>, Gamze Özgürhan<sup>3</sup>

<sup>1</sup>University of Health Sciences Turkey, Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, Clinic of Pediatric Cardiology, İstanbul, Turkey

<sup>2</sup>Bahçeşehir University Faculty of Medicine Medical Park Göztepe Hospital, Pediatric Nephrology, İstanbul, Turkey

<sup>3</sup>University of Health Sciences Turkey, İstanbul Training and Research Hospital, Clinic of Pediatrics, İstanbul, Turkey

## What is known on this subject?

The effect of maternal psychosocial status on quality of life of children with primary monosymptomatic nocturnal enuresis has not been investigated. The aim of this study is to investigate the effects of maternal depression and demographic variables on the quality of life of enuretic children.

## What this study adds?

This study is the first to evaluate both mothers and their enuretic children to determine how the mother's mental state can affect the child's quality of life.

## ABSTRACT

**Objective:** The effect of maternal psychosocial status on quality of life of children with primary monosymptomatic nocturnal enuresis (PMNE) has not been investigated. The aim of this study is to investigate the effects of maternal depression and demographic variables on the quality of life of enuretic children.

**Material and Methods:** The study consisted of 58 children with PMNE between the ages of 6 to12 and their mothers. Participants were asked to complete the Pediatric Quality of Life Inventory and the Beck depression inventory (BDI).

**Results:** Physical health total scores (PHTS) were correlated with psychosocial health total scores (PSHTS) ( $p=0.020$ ,  $r=0.394$ ) and mother's age ( $p=0.025$ ,  $r=0.162$ ). Maternal age was negatively correlated with the BDI score ( $p=0.012$ ,  $r=-0.328$ ). PHTS was significantly lower in the group with primary education ( $p=0.043$ ). In addition, maternal age and income were higher in the high school/university group ( $p=0.031$ ,  $p=0.042$ , respectively). PSHTS was lower in children with mothers who had moderate mood disorders/clinical depression, than children of mothers with normal BDI scores ( $p=0.032$ ).

**Conclusion:** The results of this study indicate that mothers with moderate mood disorders and clinical depression directly affected the psychosocial health of their enuretic children and indirectly affected their physical health.

**Keywords:** Enuresis nocturna, maternal depression, primary enuresis, quality of life



**Address for Correspondence:** Bahar Çaran MD, University of Health Sciences Turkey, Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, Clinic of Pediatric Cardiology, İstanbul, Turkey

**E-mail:** bayar818@hotmail.com **ORCID ID:** orcid.org/0000-0001-7521-2313

**Received:** 06.09.2024 **Accepted:** 16.12.2024

**Cite this article as:** Çaran B, Hacıhamdioğlu D, Özgürhan G. The effects of maternal depression on children with primary monosymptomatic nocturnal enuresis. Cam and Sakura Med J. 2024;4(3):88-94



Copyright © 2024 The Author. Published by Galenos Publishing House on behalf of the Basakşehir Cam & Sakura City Hospital. This is an open access article under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 (CC BY-NC-ND) International License.

## Introduction

Primary monosymptomatic nocturnal enuresis (PMNE) is a common childhood disorder whose cause is often multifactorial. Nocturnal enuresis, which can seriously affect the psychosocial development of children along with their self-confidence and participation in social life, is a condition that increases rates of depression and anxiety in both children and their mothers (1,2). Active family and children's involvement in treatment is important. To the knowledge of the authors, the effects of maternal psychosocial status on the quality of life in children with PMNE have not been investigated. Therefore, the aim of this study is to investigate the effects of maternal depression scores and demographic variables on the quality of life of enuretic children between the ages of 6 and 12.

## Material and Methods

This study received approval from the Local Ethics Committee of the University of Health Sciences Turkey, Istanbul Training and Research Hospital (approval date: 04.08.2017; study no: 1057). The study was performed at the same facility and consisted of 58 children between the ages of 6 and 12 years with PMNE, along with their mothers, who were outpatients of the pediatric clinic. A diagnosis of PMNE was made based on the Diagnostic and Statistical Manual of Mental Disorders-5 criteria (3). After taking the patient's history and conducting a physical examination, blood analysis, urinalysis, urine culture, and ultrasound were performed. Patients with any chronic disease or mothers who had received medication for any disease were excluded from the study as declared by their parents.

The Pediatric Quality of Life Inventory has been validated in Turkey and is considered a reliable inventory to assess quality of life in children (4,5). Three areas comprise the total assessment: physical health total score (PHTS), psychosocial health total score (PSHTS), and scale total score (TS). The survey consists of 23 Likert-type questions, which are valued between 0 and 100 points each (100: never, 75: rarely, 50: sometimes, 25: often, 0: always). The higher the overall score, the higher the children's health-related quality of life.

Mothers in the study were asked to complete the Beck depression inventory (BDI), which was validated and found to be reliable by Hisli (6). This inventory is a depression assessment scale consisting of 21 multiple-choice questions. Each question is scored between 0-3, where a total final score between 1-10 is considered normal, 11-16 indicates a moderate mood disorder, 17-20 indicates clinical depression,

21-30 moderate depression, 31-40 severe depression, and 41-63 implies very serious depression.

Mothers were also asked to provide information about demographic data such as maternal age, education level, income level, marital status, and number of children.

## Statistical Analysis

Analyses were performed using the SPSS 22.0 software package for Windows. Results are expressed as median (interquartile range) for descriptive data. The Kolmogorov-Smirnov test was used to assess the normality of parameters, and the Mann-Whitney U test was used for comparisons of two groups in the analysis of quantitative independent data that did not show normal distribution. The chi-square test was used in the analysis of qualitative independent data, and the Fisher test was used when chi-square test conditions were not met. Spearman correlation analysis was used for the data that did not show normal distribution, and Pearson correlation analysis was used for the data that showed normal distribution. Statistical significance was defined as  $p < 0.05$ .

## Results

The median ages of the patients and mothers were 8 years and 33 years, respectively. Socio-demographic characteristics of children and mothers are shown in Table 1. A total of 58 children-29 (50%) girls and 29 (50%) boys-and their mothers were included in the study. Correlation analysis of quality of life scores, BDI scores and the age of children and mothers presented in Table 2. Patient age was correlated Beck depression score (BDS) PHTS ( $p=0.025$ ,  $r=0.290$ ). PHTS was correlated with PSHTS ( $p=0.020$ ,  $r=0.394$ ) and maternal age ( $p=0.025$ ,  $r=0.162$ ). The age of mothers was negatively correlated with BDS ( $p=0.012$ ,  $r=-0.328$ ). No significant differences were observed between PHTS, PSHTS, TS, and BDS according to the mother's job status, income, number of children, and marital status. However, when the mother's education level was compared with quality-of-life scores, PHTS was found to be significantly lower in the group with primary education ( $p=0.043$ ). In addition, mothers with high school/university level education had higher maternal ages and income ( $p=0.031$ ,  $p=0.042$ , respectively). In the comparison of mothers between  $<32$  years and  $\geq 32$  years, BDS was significantly higher in the group under 32 years of age compared to the group aged 32 years or above ( $p=0.023$ ). There were no significant differences between mother's age ( $<32$  years and  $\geq 32$  years) and education level (uneducated to primary school and high school to university) ( $p=0.210$ ) (Table 3). The comparisons of mothers' BDS with socio-

**Table 1. Socio-demographic and inventory characteristics of children and mothers**

Parameter	Median (IQR)
Age (years)	8
Gender (M/F)	1 (50% F)
Mother age (years)	33±6.5
<b>Mother education status</b>	
Uneducated	n=6 (10.3%)
Primary school	n=36 (62.1%)
High school	n=7 (12.1%)
University	n=9 (15.4%)
<b>Job status</b>	
Working	n=8 (13.8%)
Unemployed	n=50 (86.2%)
<b>Income</b>	
50-100\$	n=9 (15.5%)
101-150\$	n=24 (41.4%)
>150\$	n=25 (43.1%)
<b>Number of children</b>	
1	n=4 (6.9%)
2	n=28 (48.3%)
3	n=17 (29.3%)
≥4	n=9 (15.5%)
Martial status (married/single)	n=56 (96.6%)
Physical health total score	68.75 (±18.75)
Psychosocial health total score	69.15 (±17.02)
Scale total score	71.15 (±15.48)
<b>Beck depression score</b>	
Normal (0-10)	n=20 (34.5%)
Moderate mood disorder (11-16)	n=17 (29.3%)
Clinical depression (≥17)	n=21 (36.2%)

M/F: Male/female, IQR: Interquartile range

**Table 2. Correlation analysis of quality of life scores, BDI scores and the age of children and mothers**

Parameters	Age	PHTS	PSHTS	TS	Mother age	BDS
<b>Age</b>		<b>p=0.025</b> r=0.290	p=0.287 r=0.142	p=0.071 r=0.239	p=0.254 r=0.152	p=0.795 r=0.350
<b>PHTS</b>			<b>p=0.020</b> r=0.394	<b>p=0.000</b> r=0.802	<b>p=0.025</b> r=0.162	p=-0.59 r=0.659
<b>PSHTS</b>				<b>p=0.000</b> r=0.815	p=0.253 r=-0.152	p=0.514 r=0.087
<b>TS</b>					p=0.282 r=0.144	p=0.612 r=-0.068
<b>BDS</b>					<b>p=0.012</b> r=-0.328	
<b>NoC</b>	p=0.363 r=0.120	p=0.843 r=-0.027	p=0.667 r=0.058	p=0.960 r=0.007	<b>p=0.031</b> r=0.284	p=0.347 r=-0.126

PHTS: Physical health total score, PSHTS: Psychosocial health total score, TS: Scale total score, BDS: Beck depression score, NoC: Number of children, BDI: Beck depression inventory

demographic data and children's Quality of Life Scores are presented in Table 4. There were no differences in terms of child's age, mother's age, gender, number of children, mother's education, job, income, and marital status between the normal and moderate mood disorder/clinical depression groups. In addition, there were no differences in PHTS and TS between the groups. However, PSHTS was lower in children whose mothers were in the group with moderate mood disorder or clinical depression group than in those whose mothers were in the normal group ( $p=0.032$ ).

## Discussion

The present study investigated the effect of maternal depression levels on the quality of life of enuretic children. PMNE can be uncomfortable for both children and their caregivers. The effects of maternal emotional disturbance on enuretic children have been investigated in many controlled studies (1,7,8). Childhood studies have also revealed that those diagnosed with enuresis result in more symptoms of depression and lower quality of life when compared to control groups (2,9,10,11). However, the effect of maternal depression on the child's quality of life has not been thoroughly investigated.

In a study utilizing psychometric questionnaires that included 44 mothers of children with PMNE and 45 mothers of non-enuretic children, it was found that the general psychopathology index was higher among mothers of PMNE children (1). In addition, instances of sexual abuse and physical neglect were found to be more common in mothers of children with PMNE. Interestingly, the psychiatric issues of children were not within the scope of this study. In another study, while the BDI scores were higher in mothers of children

**Table 3. Comparison analysis of maternal education level with maternal age, income levels, number of children, child quality of life scale and BDI scores**

Maternal education status	Uneducated-primary school (n=42)	High school-university (n=16)	p
Mother age (yr)	32±8.25	35±8.75	<b>0.031</b>
<b>Income</b>			
<150\$	n=33 (78.6%)	n=0	<b>0.042*</b>
≥150\$	n=9 (21.4%)	n=16 (100%)	
NoC	3±1	2±1	0.199
Age (yr)	8±3	7±1	0.212
PHTS	68.7±16.4	75.8±14.1	<b>0.043</b>
PSHTS	69.2±14.8	69.2±9.8	0.910
TS	69.5±13	73.4±9.3	0.310
BDS	14±15.25	13.5±7.25	0.525
Maternal age	<32 yr n=22	≥ 32 yr n=36	
Mother age (yr)	28.5±4.25	36±6.75	<b>0.000</b>
<b>Income</b>			
<150\$	n=2 (9%)	n=7 (19.4%)	0.459
≥150\$	n=20 (81%)	n=29 (80.6%)	
NoC	2±1	3±1	0.053
Age (yr)	7.5±2.25	8±3	0.146
PHTS	73.4±14.7	68.8±17.1	0.255
PSHTS	70.8±12.5	66.7±14.6	0.268
TS	72.3±11	66.8±12.9	0.110
BDS	15±14.75	11±10.75	<b>0.023</b>
<b>Education status</b>			
<b>Uneducated-primary school</b>	n=18 (81.8%)	n=24 (66.7%)	0.210
High school-university	n=4 (18.2%)	n=12 (33.3%)	

\*Fisher's exact test, data presented as median (±IQR), BDS: Beck depression score, PHTS: Physical health total score, PSHTS: Psychosocial health total score, TS: Scale total score, NoC: Number of children, IQR: Interquartile range, BDI: Beck depression inventory

with PMNE (n=28) than mothers of children with no health issues (n=38), there was no statistical difference in their Spielberger's state-trait anxiety inventory (STAI) scores (7). In another study that included 90 mothers of children with PMNE and 80 mothers of children without PMNE, it was found that the trait-anxiety score, a subcomponent of the STAI, and the mean BDI score were higher in mothers of children with PMNE than in mothers of children without PMNE (12). However, there was no significant correlation between STAI and BDI scores. Trait anxiety is the genetic predisposition to anxiety and is considered to be a permanent psychological characteristic (13). This finding is supported by another study which consisted of 96 children (52 enuretic children and 44 healthy children) and their mothers (14). Both child anxiety and mother trait anxiety were found to be higher for children

and mothers in PMNE group. In another study with a similar design which included 40 mothers of children with PMNE and 44 mothers of healthy children, trait anxiety scores were observed to be different between the two groups, but the BDI scores were similar between the two groups (8). It seems that mothers of children with PMNE tend to have higher levels of psychopathology, such as trait anxiety, and this can often be reflected in their children. The ability to experience negative emotions in a stable and consistent way across various situations, such as the stress of having PMNE, could be related to a heritable factor. It is not clear whether PMNE is a result of or a cause for anxiety. Another result of these studies is that anxiety is not always associated with depression, and the effect of depression on the quality of life of children is unknown.

**Table 4. Comparison of mothers' Beck depression scores with socio-demographic data and children's Quality of Life Scores**

Parameter	Normal BDS: 1-10 (n=20) Median ± IQR	Moderate mood disorder and clinical depression BDS: 11-20 (n=38) Median ± IQR	p
Age (yr)	8±2.75	8±2.25	0.543
Mother age (yr)	33.5±7.5	32±7	0.749
Gender (M/F)	12/8	17/21	0.273
PHTS	75±17.16	68.7±24.96	0.154
PSHTS	72.45±15	66.6±22.1	<b>0.032</b>
TS	73.35±12.48	67.35 ±16.5	0.092
BDS	7±3	17.5±10.75	<b>0.000</b>
	<b>n (%)</b>	<b>n (%)</b>	
<b>Mother education status</b>			
Unducated/primary school	16(80%)	26 (68.4%)	0.348
High school/university	4 (20%)	12 (31.6%)	
<b>Job status</b>			
Working	1 (5%)	7 (18.4%)	0.241
Unemployed	19 (95%)	31 (81.6%)	
<b>Income</b>			
<100\$	4 (20%)	5 (13.2%)	0.704
>100\$	16(80%)	33 (86.8%)	
<b>NoC</b>			
≤2	10 (50%)	21 (57.9%)	0.591
≥3	10 (50%)	17 (42.1%)	
<b>Marital status</b>			
Married	20 (100%)	36 (9.7%)	0.540
Single	0 (0%)	2 (5.3%)	

BDS: Beck depression score, IQR: Interquartile range, M: Male, F: Female, PHTS: Physical health total score, PSHTS: Psychosocial health total score, TS: Scale total score, NoC: Number of children

In a study by Hägglöf et al. (2) on Swedish children, pharmacological treatment was utilized for enuretic children. They determined that self-confidence values of children who underwent the treatment had significantly increased both 3 and 6 months after the treatment, compared to their pre-treatment values, and compared to the children who did not benefit from the treatment. Sahtiyanci et al. (9) studied 40 children diagnosed with primary nocturnal enuresis, whose enuresis improved after responding to 3 months of desmopressin treatment. Children and their mothers were asked to complete the BDI before and after treatment (9). While there was a statistically significant improvement in the depression scale scores for the children compared to the pre-treatment period, there was no significant change in the BDI scores of the mothers. In another study, 47 children diagnosed with PMNE were evaluated before and on the 3<sup>rd</sup> month of desmopressin treatment through administration

of the Life Quality Scale for Children then their mothers were asked to complete the short form health survey (SF-36) (10). The results revealed that both the children's and mother's scores improved. However, there was no indication whether the children's scores improved after the treatment. Naitoh et al. (11) evaluated the health-related quality of life of 139 patients with nocturnal enuresis as well as that of their mothers before and after treatment. The results indicated a higher state anxiety score for mothers triggered as a response to a stressful situation, and a similar trait anxiety score. These results also demonstrated that after treatment for enuresis, the health-related quality of life score was improved both for the enuretic children as assessed by the Kid-KINDL protocol, and for the mothers of enuretic children as assessed by the SF-36 and STAI. It can be extrapolated from these results that as enuresis improves, children's self-confidence increases, their depression levels decrease, and their quality of life

improves. Mothers who have state anxiety, possibly triggered by enuresis, can also see an improvement in their quality of life with the management of enuresis. It was also observed in this same study that mothers of enuretic children tended to be more depressed than the control group, and that the depression levels of some of these mothers did not improve even if their children's condition improved. In conclusion, it is not clear whether maternal depression is a contributing factor or a result of enuresis. Furthermore, the effect of maternal depression on the enuretic child is unknown.

In the present study, physical health scores were correlated with psychosocial health scores and maternal age. The age and income of mothers with a high school or university education were higher than those of mothers with no education or only primary school education. These results support the effect of maternal education and income level on both physical and psychosocial health. There is evidence that psychosocial health can be predicted by physical health and that lower levels of psychosocial health may be associated with physical health disorders (15,16). In this study, it was observed that BDI was inversely correlated with maternal age, and mothers with lower education status were younger. It seems that the younger and less educated mother has a higher tendency toward depression. Durmaz et al. (1) observed that mothers of enuretic children had more psychopathology, and Sahtiyanci et al. (9) concluded that there was no change in depression levels after treatment. As a result, some mothers are more disposed to depression due to factors other than enuresis. In the present study, the psychosocial health scores of the children of mothers in the moderate mood disorder group and clinical depression group were lower than those of mothers with normal BDI scores. The effect of maternal depression on child psychosocial status has been widely studied, and the association of exposure to maternal depression during year 2 of a child's life with future childhood behavioral problems has been evaluated (17). Research in these areas has concluded that exposure to maternal depression during this critical second year of life may have a negative correlation with behavioral development through age 9. Exposure to maternal depression in the early years of life can affect later life psychosocial well-being. However, there is some contradictory research. In a cross-sectional study, 111 mother-child dyads were examined for maternal depressive symptoms and their effects on children's mental health (18). This study observed that while maternal depressive symptoms were strongly related to maternal reports of children's internalizing and externalizing mental health problems, these symptoms were unrelated to children's self-reported depressive symptoms. This result does

not indicate that no relationship exists between depressive symptoms in the mother and mental health problems in children. Rather, it suggests that not only the parents' perspective, but also the children's perspective should be evaluated. The present research evaluated children's quality of life scales according to the children's own self-reports and observed that enuretic children with depressed mothers had lower scores on their psychosocial quality of life scales. Psychiatric disorders such as depression and attention deficit hyperactivity disorder have often been reported with PMNE co-morbidity. On the other hand, in another study examining the relationship between various types of enuresis, urinary incontinence, behavioral problems, and psychiatric disorders, the highest association with psychiatric disorders was found in children with delayed urination, and the lowest association was found in children with PMNE (19). Evaluation of maternal and child mental health may affect the success of treatment in patients diagnosed with PMNE, where treatment periods are at least 6 months, as patient and family involvement is important in these cases.

### Study Limitations

The presented study has some limitations. The data used in this study were cross-sectional; no control group was used; the sample size was rather small to evaluate other contributing factors; and no information about fathers was included. Chronic diseases were excluded from the study according to parental declaration. Psychiatric disorders of children or mothers were not assessed by a psychiatrist or a psychologist. We could not evaluate the situation of the mother and children after treatment; further studies are needed for evaluation of the treatment effect.

### Conclusion

Despite these limitations, this study is the first to evaluate both mothers and their enuretic children to determine how the mother's mental state can affect the child's quality of life. The results of this study show that the psychosocial and physical health of enuretic children is affected, respectively, directly and indirectly, by mothers with moderate mood disorders and clinical depression. Furthermore, the present study showed an expected correlation between maternal education and income levels and children's physical health. Although these results demonstrate the effects of maternal depression status on their children, there is further need to use a multi-informant approach to assess enuretic children's life quality.

## Ethics

**Ethics Committee Approval:** This study received approval from the Local Ethics Committee of the University of Health Sciences Turkey, Istanbul Training and Research Hospital (approval date: 04.08.2017; study no: 1057).

**Informed Consent:** Consent forms were obtained from mothers and children before the study.

## Footnotes

### Authorship Contributions

Concept: D.H., Design: D.H., G.Ö., Data Collection or Processing: B.Ç., Analysis or Interpretation: G.Ö., Literature Search: B.Ç., Writing: B.Ç.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

## REFERENCES

- Duramaz O, Mutluer T, Bütün E. Psychiatric dimensions in mothers of children with primary nocturnal enuresis: a controlled study. *J Pediatr Urol.* 2017;13:62.
- Hägglöf B, Andrén O, Bergström E, Marklund L, Wendelius M. Self-esteem in children with nocturnal enuresis and urinary incontinence: improvement of self-esteem after treatment. *Eur Urol.* 1998;33(Suppl 3):16-19.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Washington, DC: American Psychiatric Association; 2013.
- Üneri Ö. Çocuklar için yaşam kalitesi ölçeğinin 2-7 yaşlarındaki Türk çocuklarında geçerlik ve güvenilirliği. [Uzmanlık tezi]. Kocaeli: Kocaeli Üniversitesi Tıp Fakültesi, Çocuk Psikiyatrisi Anabilim Dalı; 2005.
- Memik NÇ, Ağaoğlu B, Coşkun A, Karakaya I. Summary: the validity and reliability of Pediatric Quality of Life Inventory in 8-12 year old Turkish children. *Çocuk ve Ergen Ruh Sağlığı Dergisi.* 2008;15.
- Hisli N. Beck Depresyon Envanteri'nin geçerliliği üzerine bir çalışma. *Psikoloji Dergisi,* 1988; 6:118-122
- Egemen A, Akil I, Canda E, Ozyurt BC, Eser E. An evaluation of quality of life of mothers of children with enuresis nocturna. *Pediatr Nephrol.* 2008;23:93-98.
- Tanriverdi MH, Palanci Y, Yılmaz A, Penbegül N, Bez Y, Daggullı M. Effects of enuresis nocturna on parents of affected children: case-control study. *Pediatr Int.* 2014;56:254-257.
- Sahtiyancı M, Aydoğan G, Yılmaz A, et al. Evaluation of patients with primary nocturnal enuresis and their mothers using depression scales. *JOPP Derg.* 2011;3:122-128.
- Kara A, Ozdemir K, Dincel N, et al. Evaluation of life qualities on children with monosymptomatic enuresis nocturia. *J Contemp Med.* 2015;5:83-87.
- Naitoh Y, Kawacuchi A, Soh J, Kamoi K, Miki T. Health related quality of life for monosymptomatic enuretic children and their mothers. *J Urol.* 2012;188:1910-1914.
- Meydan EA, Civilibal M, Eevli M, Duru NS, Civilibal N. The quality of life of mothers of children with monosymptomatic enuresis nocturna. *Int Urol Nephrol.* 2012;44:655-659.
- Spielberger CD. Theory and research on anxiety. In Spielberger CD, editor. *Anxiety and Behavior.* New York: Academic Press; 1966.
- Karaca Ünlü A, Aksu B, Ağbaş A, Eevli M. Evaluation of anxiety levels in children and their mothers with monosymptomatic nocturnal enuresis. *J Ist Faculty Med.* 2020;83:100-104.
- Lauder W, Burton C, Roxburgh CM, Themessl-Huber M, O'Neill M, Abubakari A. Psychosocial health and health-related quality of life in school pupils 11-18 years. *J Clin Nurs.* 2010;19:1821-1829.
- Drosopoulou G, Sergentanis TN, Mastorakos G, et al. Psychosocial health of adolescents in relation to underweight, overweight/obese status: the EU NET ADB survey. *Eur J Public Health.* 2021;31:379-384.
- Guerrero N, Gangnon R, Curtis MA, Valdez CR, Ehrenthal DB, Jacobs EA. The association between exposure to maternal depression during year 2 of a child's life and future child problem behavior. *Matern Child Health J.* 2021;25:731-740.
- van Doorn MM, Kuijpers RC, Lichtwarck-Aschoff A, Bodden D, Jansen M, Granic I. Does mater-child interaction mediate the relation between maternal depressive symptoms and children's mental health problems? *J Child Fam Stud.* 2016;25:1257-1268.
- Zink S, Freitag CM, von Gontard A. Behavioral comorbidity differs in subtypes of enuresis and urinary incontinence. *J Urol.* 2008;179:295-298.