J Compr Ped. 2022 August; 13(3):e130013. doi: 10.5812/compreped-130013.
Published online 2022 October 10. **Research Article**

Emotional, Behavioral and Social Problems in Children with Fecal Incontinence by Child Behavior Checklist (CBCL): A Cross-sectional Study

Amirhossein Hosseini [1], Atefeh Mirbazel [1], Vahide Zeinali [2], Mahmoud Hajipour [1] and Ghazal Zahed [3, *]

[1] Pediatric Gastroentrology, Hepatology and Nutrition Research Center, Research Institute for Children's Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[2] Mofid Children's Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[3] Pediatric Psychology Department, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[*] *Corresponding author*: Pediatric Psychology Department, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Email: ghazal.zahed@gmail.com

Received 2022 July 17; **Revised** 2022 August 22; **Accepted** 2022 September 14.

Abstract

Background: Fecal incontinence (FI) is a stressful condition for children and their parents that may affect the patient's psychological well-being. Evaluating the patients' psychological status may help physicians manage the disease effectively.
Objectives: This study aimed to assess the emotional and behavioral disturbances in children with FI who were referred to the pediatric gastroenterology clinic in Mofid Children's Hospital from April 2021 to 2022.
Methods: This cross-sectional study included children (over four years old) with chronic constipation and fecal incontinence. The diagnosis of chronic constipation and FI were made according to Rome-IV criteria. The Child Behavior Checklist (CBCL) evaluated patients' emotional, behavioral, and social problems.
Results: One hundred one patients with a mean age of 7.96 years were enrolled in the study; 67.32% were males. According to CBCL, 12% (12 patients) indicated emotional and behavioral problems, with CBCL scores in the clinical or at-risk range. We detected anxious/depressed problems in five (4.95%), withdrawn/depressed problems in eight (7.92%), somatic complaints in seven (6.93%), social problems in eight (7.92%), thought problems in nine (8.91%), attention problems in seven (6.93%), rule-breaking behavior in two (1.98%), and aggressive behavior in nine (8.91%) patients. The risk of internalizing and externalizing disorders was reported in four (3.96%) and five (4.95%) patients. Also, eight (7.92%) and seven (6.93%) patients had clinical symptoms of internalizing and externalizing disorders, respectively. There was no significant relationship between patients' age and gender with the CBCL scores in any subscales. However, there was a significant difference in the total score among the age groups ($P = 0.04$).
Conclusions: The relatively high prevalence of emotional, behavioral, and social problems in our study corroborates the importance of psychological screening of children with FI during the treatment process.

Keywords: Fecal Incontinence, Functional Constipation, Children, CBCL, Behavioral Problems

1. Background

Fecal incontinence (FI), also known as encopresis or soiling, is one of the common gastrointestinal problems in children. It indicates the passage of the stool in the underwear by children four years of age and older who have completed toilet training (1). Initially, FI was considered only for children with neurological disabilities, but further studies showed that approximately one to four percent of four-year-old children (2) and one to two percent of children aged ten to sixteen years old experienced FI (3). FI usually is related to underlying constipation. Constipation leads to hardening and build-up of stool in the colon resulting in leakage of stool. Therefore in most cases, constipation is well recognized before the child presents with FI (4).

Losing the control of fecal continence is a stressful condition for children and their parents. It negatively affects their quality of life (5, 6). Incontinence can lead to embarrassment for the child and disappointment for parents, so children with incontinence are at higher risk for psychological disorders (7). The effect of psychological factors on the development and persistence of fecal incontinence is debatable. Nevertheless, incontinence in children and adolescents with neurodevelopmental and psychological disorders is common and vice versa (8, 9). Treating incontinence can reduce the severity of psychological disorders (7). However, understanding the patients' psychoso-

cial status may provide clues as to whether there are psychosocial stressors that either exacerbate the problem or interfere with treatment (4).

The majority of the studies have focused on the prevalence of psychological comorbidities and problems in adults with FI. A population-based study in Australia showed that FI is associated with depression and anxiety in adults over 18 years old (10). Another study on 996 adult patients with functional gastrointestinal disorders showed that patients with FI had specific personality characteristics (11). The studies on children usually evaluated the comorbidity of specific psychological disorders such as attention-deficit/hyperactivity disorder (ADHD) (12, 13), autism spectrum disorder (ASD) (14, 15), intellectual disability (ID) (16), and anxiety disorders (17) with FI. A few studies, especially in Iran, focused on emotional and behavioral problems in children with FI.

2. Objectives

This study aimed to assess the emotional, behavioral, and social problems in children with FI who were referred to the pediatric gastroenterology clinic at Mofid Children's Hospital.

3. Methods

3.1. Study Design and Participants

This cross-sectional study was conducted at Mofid Children's Hospital (Tehran, Iran) between April 2021 and April 2022. The study was approved by the Research Ethics Committee (REC) of the Shahid Beheshti University of Medical Sciences (IR.SBMU.MSP.REC.1397.654). Children over four years old with a diagnosis of chronic constipation and FI were included consecutively. The diagnosis of chronic constipation and FI were made according to Rome-IV criteria. All patients received standardized therapy for FI, depending on their clinical conditions. Subsequently, a pediatric psychiatrist evaluated the patients for emotional, behavioral, and social problems.

3.2. Measures

The emotional, behavioral, and social problems in patients were assessed with the Child Behavior Checklist (CBCL). The CBCL is a widely used parental questionnaire that contains 113 empirically derived behavioral items (18). It is subdivided into eight subscales, namely withdrawn/depressed, somatic complaints, anxious/depressed, rule-breaking behavior, social problems, thought problems, attention problems, and aggressive behavior. Also, the CBCL provides internalizing, externalizing, and total problems. Internalizing behaviors mirror mood problems, including anxiety, depression, and social withdrawal. Externalizing behaviors reflect the patient's oppositional and delinquent behaviors. The parents were requested to evaluate their child's behavior on a 3-point Likert scale for each item (0 = not true; 1 = somewhat or sometimes true; 2 = very true or often true). According to the normative data of the CBCL, a *t*-score $\leq$ 59 indicates non-clinical symptoms, a *t*-score between 60 and 64 indicates that the child is at risk for problem behaviors, and a *t*-score $\geq$ 65 indicates clinical symptoms. The reliability and validity of CBCL is approved across different clinical groups (19-22).

3.3. Data Analysis

Statistical analyses were performed using IBM SPSS statistics ver. 23 (IBM. Armonk, NY, USA). Quantitative and qualitative variables were expressed as mean $\pm$ standard deviation and number (percent), respectively. The relationship between the CBCL scores (subscales and total) and gender was analyzed using the student t-test. Also, the relationship between the CBCL scores and age groups was analyzed using ANOVA. Statistical significance was presented when the P-value was less than 0.05.

4. Results

Of the 101 patients, 68 were males, and 33 were females, with a mean age of 7.96 years (3 - 15 years). Concerning the total problems of the CBCL, the results show that 88.12% (89 patients) of all participants obtained scores in the non-clinical range, 1.98% (one boy and one girl) were at risk, and 9.90% (10 boys) had clinical symptoms. According to the scores, we detected anxious/depressed problems in five (4.95%), withdrawn/depressed problems in eight (7.92%), somatic complaints in seven (6.93%), social problems in eight (7.92%), thought problems in nine (8.91%), attention problems in seven (6.93%), rule-breaking behavior in two (1.98%), and aggressive behavior in nine (8.91%) patients. All of them were in the at-risk or clinical range. Totally, 0.99% of patients under six years old, 7.92% of patients six to nine years old, and 2.97% of over 9-year-olds had emotional and behavioral problems. According to CBCL scores, four (3.96%) and five (4.95%) patients were at risk of internalizing and externalizing disorders, respectively. Also, eight (7.92%) and seven (6.93%) patients had clinical symptoms of internalizing and externalizing disorders, respectively (Table 1).

There were no significant differences in CBCL scores between males and females for all subscales (Table 2).

No statistically significant relationship existed between patients' age groups and CBCL scores in any subscales ($P > 0.05$). However, there was a statistically significant difference in the total score among the age groups (Table 3).

Table 1. Participants' Emotional and Behavioral Status in CBCL Based on Gender and Age Group

Factors	Female (n = 33)			Male (n = 68)		
	Age ≤ 6	6 < Age < 9	Age ≥ 9	Age ≤ 6	6 < Age < 9	Age ≥ 9
Anxious/depressed						
Non-clinical	4 (12.12)	17 (51.52)	12 (36.36)	22 (32.35)	26 (38.24)	15 (22.06)
At-risk	0	0	0	0	0	0
Clinical	0	0	0	0	3 (4.41)	2 (2.94)
Withdrawn/depressed						
Non-clinical	4 (12.12)	16 (48.48)	11 (33.31)	22 (32.35)	25 (36.77)	15 (22.06)
At-risk	0	1 (3.04)	0	0	2 (2.94)	1 (1.47)
Clinical	0	0	1 (3.04)	0	2 (2.94)	1 (1.47)
Somatic complaints						
Non-clinical	3 (9.09)	17 (51.52)	11 (33.31)	22 (32.35)	25 (36.77)	16 (23.53)
At-risk	1 (3.04)	0	1 (3.04)	0	2 (2.94)	0
Clinical	0	0	0	0	2 (2.94)	1 (1.47)
Social problems						
Non-clinical	4 (12.12)	17 (51.52)	12 (36.36)	21 (30.88)	23 (33.83)	16 (23.53)
At-risk	0	0	0	1 (1.47)	5 (7.35)	1 (1.47)
Clinical	0	0	0	0	1 (1.47)	0
Thought problems						
Non-clinical	4 (12.12)	16 (48.48)	12 (36.36)	20 (30.1)	25 (36.77)	14 (20.10)
At-risk	0	1 (3.04)	0	1 (1.47)	3 (4.41)	1 (1.47)
Clinical	0	0	0	1 (1.47)	1 (1.47)	1 (1.47)
Attention problems						
Non-clinical	4 (12.12)	16 (48.48)	11 (33.31)	21 (30.88)	25 (36.77)	16 (23.53)
At-risk	0	0	1 (3.04)	0	2 (2.94)	1 (1.47)
Clinical	0	0	0	1 (1.47)	2 (2.94)	0
Rule-breaking behavior						
Non-clinical	4 (12.12)	17 (51.52)	12 (36.36)	22 (32.35)	27 (37.71)	17 (25.00)
At-risk	0	0	0	0	2 (2.94)	0
Clinical	0	0	0	0	0	0
Aggressive behavior						
Non-clinical	4 (12.12)	17 (51.52)	12 (36.36)	21 (30.88)	22 (32.35)	16 (23.53)
At-risk	0	0	0	0	3 (4.41)	0
Clinical	0	0	0	1 (1.47)	4 (5.88)	1 (1.47)
CBCL internalizing						
Non-clinical	4 (12.12)	15 (45.45)	10 (30.27)	21 (30.88)	24 (35.29)	15 (22.07)
At-risk	0	1 (3.04)	1 (3.04)	0	1 (1.47)	1 (1.47)
Clinical	0	1 (3.04)	1 (3.04)	1 (1.47)	4 (5.88)	1 (1.47)
CBCL externalizing						
Non-clinical	4 (12.12)	15 (45.42)	11 (33.31)	21 (30.88)	22 (32.35)	16 (23.53)
At-risk	0	1 (3.04)	1 (3.04)	0	3 (4.41)	0
Clinical	0	1 (3.04)	0	1 (1.47)	4 (5.88)	1 (1.47)
CBCL total						
Non-clinical	4 (12.12)	16 (48.48)	12 (36.36)	21 (30.88)	22 (32.35)	14 (20.60)
At-risk	0	1 (3.04)	0	0	0	1 (1.47)
Clinical	0	0	0	1 (1.47)	7 (10.29)	2 (2.94)

5. Discussion

The first-line therapy for children with FI is intervention by medication(s) for alleviating the symptoms of constipation and incontinence. However, psychological disorders and behavioral problems are common in patients with FI that should be noticed. In connection therewith, this study focused on behavioral problems of children

Table 2. Participants' Degree of Emotional and Behavioral Problems Based on Gender

Factors	Female (n = 33)	Male (n = 68)	P-Value
Anxious/depressed	48.59 ± 8.10	50.57 ± 10.77	0.15
Withdrawn/depressed	50.43 ± 9.62	49.90 ± 10.21	0.93
Somatic complaints	50.78 ± 10.66	49.62 ± 9.62	0.36
Social problems	48.36 ± 8.03	50.61 ± 10.74	0.29
Thought problems	49.42 ± 9.76	50.08 ± 10.15	0.74
Attention problems	48.78 ± 8.97	51.52 ± 10.43	0.96
Delinquent behavior	48.87 ± 5.75	50.49 ± 5.21	0.34
Aggressive behavior	47.36 ± 8.56	51.15 ± 10.41	0.36
CBCL internalizing	50.95(8.74)	49.43(8.13)	0.37
CBCL externalizing	48.57(6.40)	50.85(8.57)	0.12
CBCL total	48.49 ± 8.60	50.66 ± 10.54	0.53

Table 3. Participants' Degree of Emotional and Behavioral Problems Based on Age Group

Factors	Age Groups			P-Value
	Age ≤ 6 (n = 38)	6 < Age < 9 (n = 35)	Age ≥ 9 (n = 28)	
Anxious/depressed	47.64 ± 8.95	53.66 ± 9.74	48.49 ± 10.76	0.19
Withdrawn/depressed	45.91 ± 7.10	52.67 ± 10.98	52.44 ± 10.48	0.24
Somatic complaints	47.28 ± 7.87	52.25 ± 10.95	50.78 ± 10.50	0.61
Social problems	47.28 ± 7.31	54.19 ± 10.80	48.16 ± 10.65	0.14
Thought problems	47.65 ± 9.54	52.01 ± 10.60	50.24 ± 9.51	0.56
Attention problems	46.13 ± 7.39	52.56 ± 10.94	52.02 ± 10.52	0.35
Delinquent behavior	49.37 ± 4.61	51.47 ± 6.37	48.99 ± 4.86	0.14
Aggressive behavior	48.99 ± 9.51	53.51 ± 10.46	46.96 ± 9.00	0.14
CBCL internalizing	47.87 ± 6.44	51.19 ± 8.92	50.14 ± 8.89	0.26
CBCL externalizing	50.25 ± 6.16	51.32 ± 7.93	47.69 ± 6.57	0.10
CBCL total	46.97 ± 8.16	54.01 ± 10.52	49.08 ± 10.23	0.04

with FI. Our results demonstrate that out of the 101 examined patients, around 12% (12 patients) exhibited emotional and behavioral problems, with CBCL scores in the clinical or at-risk range. The externalizing and internalizing problems were observed almost equally in patients.

The prevalence of psychiatric symptoms and behavioral disorders in children with functional incontinence (including nocturnal enuresis, daytime urinary incontinence, and FI) varies in different studies. For example, Von Gontard et al. estimated the prevalence of psychological disturbances between 30 to 50 percent in children with FI (23). They used ICD-10 or Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) as diagnostic criteria. Another study on children with functional incontinence reported that 41% of patients had clinically relevant psychological symptoms based on CBCL (5). Also, a study on 25 children with FI claimed that 44% (11/25) had behavioral problems and successful treatment of FI normalized their emotional processing (24). The reported prevalence of behavioral problems in our study was relatively high but significantly less than in previous studies. It could be due to differences in diagnostic criteria and population.

According to our findings, thought problems and aggressive behaviors were the most prevalent problems in children with FI. The CBCL thought problems subscale is clinically helpful in identifying psychotic symptoms in children (25). However, it should be noted that not all children who report unusual beliefs or concerning behavior to their parents will have a psychiatric disorder. Almost 17% of children (ages 9 - 12) experience psychotic-like beliefs or behaviors (26). A positive screen on any CBCL subscales does not guarantee a disorder diagnosis. It is only an alarm for the physician and psychiatrist to consider the child's psychological well-being. The psychiatrists are usually cau-

tious while interpreting the CBCL findings and rely on clinical examinations and other potential risk factors for valid diagnosis.

Withdrawal and social problems were other common problems we screened in children with FI. Children with FI usually show lower social functioning and self-esteem (27). Sometimes parents punish a child with FI because they think the child voluntarily does it. This reaction can worsen the patient's psychological condition and eventually exacerbate FI. So, it is necessary that the psychiatrist or physician provides the required information to the parents and alert them about the nature of the problem. They should be prepared for a long-lasting treatment process. Additionally, children with FI may need psychological interventions such as counseling, psychotherapy, and pharmacotherapy based on the patient's clinical examinations. It seems that the combined medical-behavioral treatment approach is more effective in treating children with FI (28, 29). A pilot study on children with FI who fail traditional outpatient treatment showed that group therapy (including sessions about the gastrointestinal system, medications, toilet sitting posture, hydration fiber, and behavior contracts) could improve the results (30). Also, another study in Iran revealed that a bowel management training program could be effective for treating FI and improving the quality of life in children (31).

The findings indicated that emotional and behavioral problems were more common in patients aged six to nine years. The incidence of the problems was much lower in patients under six years old. Similar findings were reported in a study on children with ASD by Guerrera et al. (21). The authors evidenced that there was a correlation between age and CBCL scores. It could be interpreted in light of the increasing social and environmental demands of children by aging. The younger patients have more limited social relationships, and the expectations of those around them are lower, so they experience fewer difficulties adjusting their behavior. According to national health statistics reports in the USA about behavioral problems in children, males were more likely to experience emotional and behavioral problems (32). In our study, there was no statistically significant relationship between the CBCL subscales and the total scores with the gender of patients. However, most patients with emotional and behavioral problems were male.

This study had some limitations. First, we had a small sample size in one center, which could affect our results. Also, our study was cross-sectional research without a controlled group. Therefore, we cannot provide a causal relationship between children's emotional, behavioral, and social problems and FI. For that purpose, it is recommended to conduct a study including three groups: children in the clinical or at-risk range of CBCL, children with FI, and a control group.

5.1. Conclusions

The relatively high prevalence of emotional and behavioral problems in our study highlights the magnitude of the issue in children with FI and the need for better psychological screening and interventions. Screening patients using particular scales for evaluating their psychological well-being during treatment and advising parents to understand their child's condition could promote the outputs.

Acknowledgments

The authors thank colleagues in pediatrics' gastroenterology and psychology departments at Mofid children's hospital because of their collaboration and valuable comments.

Footnotes

Authors' Contribution: Study concept and design, A. H., and Gh. Z.; Analysis and interpretation of data, M. H., and V. Z.; Drafting of the manuscript, V. Z.; Critical revision of the manuscript for important intellectual content, A. H., Gh. Z., and A. M.; Statistical analysis, M. H.

Conflict of Interests: The authors declare that they have no conflict of interest.

Data Reproducibility: The dataset presented in the study is available on request from the corresponding author during submission or after publication. The data are not publicly available due to its proprietary.

Ethical Approval: The study was approved by the Research Ethics Committee (REC) of the Shahid Beheshti University of Medical Sciences (IR.SBMU.MSP.REC.1397.654; Link: ethics.research.ac.ir/EthicsProposalView.php?id=43805).

Funding/Support: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Informed Consent: In this study, children over four years old with a diagnosis of chronic constipation and FI were included consecutively. The research objectives were explained to the patients and their parents, and if they agreed, they entered the study. The consent of the patients' parents was obtained in writing format. The diagnosis of chronic constipation and FI were made according to Rome-IV criteria. All patients received standardized therapy for FI, depending on their clinical conditions. Subsequently, a pediatric psychiatrist evaluated the patients for emotional, behavioral, and social problems.

References

1. Rajindrajith S, Devanarayana NM, Thapar N, Benninga MA. Functional Fecal Incontinence in Children: Epidemiology, Pathophysiology, Evaluation, and Management. *J Pediatr Gastroenterol Nutr*. 2021;**72**(6):794–801. doi: 10.1097/mpg.0000000000003056. [PubMed: 33534361].
2. Bongers ME, Tabbers MM, Benninga MA. Functional nonretentive fecal incontinence in children. *J Pediatr Gastroenterol Nutr*. 2007;**44**(1):5–13. doi: 10.1097/01.mpg.0000252187.12793.0a. [PubMed: 17204945].
3. Rajindrajith S, Devanarayana NM, Benninga MA. Constipation-associated and nonretentive fecal incontinence in children and adolescents: an epidemiological survey in Sri Lanka. *J Pediatr Gastroenterol Nutr*. 2010;**51**(4):472–6. doi: 10.1097/MPG.0b013e3181d33b7d. [PubMed: 20562725].
4. Sood MR. *Functional fecal incontinence in infants and children: Definition, clinical manifestations, and evaluation*. Massachusetts, USA: UpToDate; 2022, [cited 2022]. Available from: https://www.uptodate.com/contents/functional-fecal-incontinence-in-infants-and-children-definition-clinical-manifestations-and-evaluation.
5. Equit M, Hill J, Hübner A, von Gontard A. Health-related quality of life and treatment effects on children with functional incontinence, and their parents. *J Pediatr Urol*. 2014;**10**(5):922–8. doi: 10.1016/j.jpurol.2014.03.002. [PubMed: 24726201].
6. Kuoch KL, Hebbard GS, O'Connell HE, Austin DW, Knowles SR. Urinary and faecal incontinence: psychological factors and management recommendations. *N Z Med J*. 2019;**132**(1503):25–33. [PubMed: 31581179].
7. Hussong J, Rosenthal A, Bernhardt A, Fleser S, Langenbeck M, Wagner C, et al. State and trait anxiety in children with incontinence and their parents. *Clin Child Psychol Psychiatry*. 2021;**26**(4):1243–56. doi: 10.1177/13591045211033175. [PubMed: 34583576].
8. Joinson C, Heron J, Butler U, von Gontard A. Psychological differences between children with and without soiling problems. *Pediatrics*. 2006;**117**(5):1575–84. doi: 10.1542/peds.2005-1773. [PubMed: 16651311].
9. von Gontard A, Mattheus H, Anagnostakou A, Sambach H, Breuer M, Kiefer K, et al. Behavioral comorbidity, overweight, and obesity in children with incontinence: An analysis of 1638 cases. *Neurourol Urodyn*. 2020;**39**(7):1985–93. doi: 10.1002/nau.24451. [PubMed: 32806882].
10. Koloski NA, Jones M, Kalantar J, Weltman M, Zaguirre J, Talley NJ. Psychological impact and risk factors associated with new onset fecal incontinence. *J Psychosom Res*. 2012;**73**(6):464–8. doi: 10.1016/j.jpsychores.2012.07.013. [PubMed: 23148816].
11. Bouchoucha M, Devroede G, Deutsch D, Raynaud JJ, Sabate JM, Benamouzig R. Personality of patients with fecal incontinence. *Int J Colorectal Dis*. 2021;**36**(2):331–7. doi: 10.1007/s00384-020-03758-w. [PubMed: 33000298].
12. Shokravi M, Mehrabani S, Massoodi A, EsmaeiliDooki M, Hajiahmadi M. Attention-deficit/hyperactivity disorder in children with constipation and fecal incontinence. *Caspian Journal of Pediatrics*. 2021;**7**(2):560–5.
13. Niemczyk J, Equit M, Hoffmann L, von Gontard A. Incontinence in children with treated attention-deficit/hyperactivity disorder. *J Pediatr Urol*. 2015;**11**(3):1410–6. doi: 10.1016/j.jpurol.2015.02.009. [PubMed: 25863677].
14. Niemczyk J, Wagner C, von Gontard A. Incontinence in autism spectrum disorder: a systematic review. *Eur Child Adolesc Psychiatry*. 2018;**27**(12):1523–37. doi: 10.1007/s00787-017-1062-3. [PubMed: 29019014].
15. von Gontard A, Pirrung M, Niemczyk J, Equit M. Incontinence in children with autism spectrum disorder. *J Pediatr Urol*. 2015;**11**(5):2640–7. doi: 10.1016/j.jpurol.2015.04.015. [PubMed: 26052001].
16. Nair LD, Sagayaraj B, V TTR, Kumar R. Incontinence in Intellectual Disability: An Under Recognized Cause. *J Clin Diagn Res*. 2015;**9**(9):Sd01–2. doi: 10.7860/jcdr/2015/14019.6448. [PubMed: 26500975]. [PubMed Central: PMC4606304].
17. Saber Sangari R, Hashemi M, Salehi B, Yousefichaijan P, Rafiei M, Rezagholizamenjany M. Anxiety Disorders in Children with Functional Constipation: A Case-Control Study. *J Compr Pediatr*. 2022;**13**(2). doi: 10.5812/compreped.119997.
18. Achenbach TM, Edelbrock C. Child behavior checklist, Child behavior. In: Naar-King S, Ellis DA, Frey MA, editors. *Assessing Children's WeilBeing: A Handbook of Measures*. **7**. New Jersey, USA: Lawrence Erlbaum Associates Publisher; 1991. p. 371–92.
19. Achenbach TM, Rescorla LA. The Achenbach System of Empirically Based Assessment (ASEBA) for Ages 1.5 to 18 Years. In: Maruish ME, editor. *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment*. **2**. New York, USA: Routledge; 2014. p. 179–214. doi: 10.4324/9781410610621-7.
20. Deckers A, Muris P, Roelofs J. Screening for Autism Spectrum Disorder with the Achenbach System of Empirically Based Assessment Scales. *J Psychopathol Behav Assess*. 2019;**42**(1):25–37. doi: 10.1007/s10862-019-09748-9.
21. Guerrera S, Menghini D, Napoli E, Di Vara S, Valeri G, Vicari S. Assessment of Psychopathological Comorbidities in Children and Adolescents With Autism Spectrum Disorder Using the Child Behavior Checklist. *Front Psychiatry*. 2019;**10**:535. doi: 10.3389/fpsyt.2019.00535. [PubMed: 31404318]. [PubMed Central: PMC6676343].
22. Van Meter A, Youngstrom E, Youngstrom JK, Ollendick T, Demeter C, Findling RL. Clinical decision making about child and adolescent anxiety disorders using the Achenbach system of empirically based assessment. *J Clin Child Adolesc Psychol*. 2014;**43**(4):552–65. doi: 10.1080/15374416.2014.883930. [PubMed: 24697608]. [PubMed Central: PMC4101065].
23. von Gontard A, Baeyens D, Van Hoecke E, Warzak WJ, Bachmann C. Psychological and psychiatric issues in urinary and fecal incontinence. *J Urol*. 2011;**185**(4):1432–6. doi: 10.1016/j.juro.2010.11.051. [PubMed: 21349549].
24. Equit M, Niemczyk J, Kluth A, Thomas C, Rubly M, von Gontard A. Central Nervous System Processing of Emotions in Children with Fecal Incontinence and Constipation. *Z Kinder Jugendpsychiatr Psychother*. 2019;**47**(1):67–71. doi: 10.1024/1422-4917/a000638. [PubMed: 30451570].
25. Salcedo S, Rizvi SH, Freeman LK, Youngstrom JK, Findling RL, Youngstrom EA. Diagnostic efficiency of the CBCL thought problems and DSM-oriented psychotic symptoms scales for pediatric psychotic symptoms. *Eur Child Adolesc Psychiatry*. 2018;**27**(11):1491–8. doi: 10.1007/s00787-018-1140-1. [PubMed: 29556765]. [PubMed Central: PMC6148419].
26. Kelleher I, Harley M, Murtagh A, Cannon M. Are screening instruments valid for psychotic-like experiences? A validation study of screening questions for psychotic-like experiences using in-depth clinical interview. *Schizophr Bull*. 2011;**37**(2):362–9. doi: 10.1093/schbul/sbp057. [PubMed: 19542527]. [PubMed Central: PMC3044617].
27. Saldana Ruiz N, Kaiser AM. Fecal incontinence - Challenges and solutions. *World J Gastroenterol*. 2017;**23**(1):11–24. doi: 10.3748/wjg.v23.i1.11. [PubMed: 28104977]. [PubMed Central: PMC5221273].
28. Brazzelli M, Griffiths PV, Cody JD, Tappin D. Behavioural and cognitive interventions with or without other treatments for the management of faecal incontinence in children. *Cochrane Database Syst Rev*. 2011;**2011**(12):Cd002240. doi: 10.1002/14651858.CD002240.pub4. [PubMed: 22161370]. [PubMed Central: PMC7103956].
29. Freeman KA, Riley A, Duke DC, Fu R. Systematic review and meta-analysis of behavioral interventions for fecal incontinence with constipation. *J Pediatr Psychol*. 2014;**39**(8):887–902. doi: 10.1093/jpepsy/jsu039. [PubMed: 24925894].
30. Gonring K, Dolan B, Kapke TL, Begotka A, Sood M, Silverman AH. Group Treatment of Fecal Incontinence: A Description of an Interdisciplinary Intervention. *J Pediatr Gastroenterol Nutr*. 2019;**69**(3):e70–4. doi: 10.1097/mpg.0000000000002372. [PubMed: 31058779].
31. Hojjati S, Khanali Mojen L, Hosseini A, Khaleghnejad Tabari A, Afaghi S, Mohajerzadeh L, et al. Evaluating the Effect of Bowel Management Training Program on Quality of Life in Children with Fecal Incontinence. *J Compr Pediatr*. 2022;**13**(1). doi: 10.5812/compreped.117569.
32. Pastor PN, Reuben CA, Duran CR. Identifying emotional and behavioral problems in children aged 4-17 years: United States, 2001-2007. *Natl Health Stat Report*. 2012;(48):1–17. [PubMed: 22737946].