Demographic and Clinical Characteristics of Children with Gender Dysphoria Symptoms: A Turkish Sample

Cinsiyet Hoşnutsuzluğu Belirtileri Gösteren Çocuklarda Demografik ve Klinik Özellikler: Bir Türkiye Örneklemi

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ABSTRACT

Objective: In this study, we aim to describe the demographic and clinical characteristics and psychological functioning of children with gender dysphoria (GD) symptoms aged between 3-12 years.

Material and Methods: The study group included 20 children (17 males, 3 females; mean age 6.63±2.43 years) with GD symptoms. A sociodemographic data form was used to collect data with regards to demographic and clinical characteristics, and pre- peri-and postnatal features. The Child Behavior Checklist (CBCL) is used to assess behavioral and emotional problems in the child.

Results: The boy/girl ratio in the study group was 5.66. The mean age at onset of gender-nonconforming behaviors was 2.85±1.17 years and the mean age of admission to our clinic was 5.82±2.27 years. 20% of the mothers reported a preference for an opposite-sex child prior to conception; 20 % of the mothers reported prenatal stress, 20% of the mothers had prenatal and 25% had postnatal depressive symptoms. There was a risk of miscarriage in 10% of children and 25% were born prematurely. 55% of our study sample exceeded the clinical threshold for internalizing problems and 40% exceeded the clinical threshold for externalizing problems in CBCL ratings.

Conclusion: There were more prepubertal boys than girls referred for GD symptoms and the age at referral was younger compared to western countries. In addition, findings of this study indicate that children with GD have poorer psychological functioning possibly due to social intolerance for cross-gender behaviors and/or interests alongside the GD per se.

Key Words: Children, Gender Identity, Gender Dysphoria, Prepubertal

ÖZ

Amaç: Bu araştırmada cinsiyet hoşnutsuzluğu (CH) belirtileri gösteren 3-12 yaş aralığındaki çocuklarda demografik ve klinik özelliklerin tanımlanması amaçlanmıştır.

Gereç ve Yöntemler: Araştırmaya CH belirtileri gösteren 20 çocuk dahil edilmiştir (17 erkek, 3 kız; ortalama yaş 6.63±2.43 yıl). Araştırmada demografik ve klinik veriler ile pre-peri- ve postnatal özelliklerin kaydedilmesi amacıyla sosyodemografik veri formu; davranışsal ve duygusal sorunların değerlendirilmesi amacıyla ise Çocukluk Çağı Davranış Değerlendirme Ölçeği (ÇÇDDÖ) kullanılmıştır.

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Conflict of Interest / *Çıkar Çatışması*: On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethics Committee Approval / *Etik Kurul Onayı*: This study was conducted in accordance with the Helsinki Declaration Principles. The study protocol has been approved by Medical Ethics Committee of Istanbul University, Cerrahpasa Faculty of Medicine and Bakirkoy Training and Research Hospital for Psychiatric and Neurological Disorders (12.07.2016/566).

Contribution of the Authors / Yazarların katkısı*: *GUNES H: Constructing the hypothesis or idea of research and/or article, Planning methodology to reach the Conclusions, Organizing, supervising the course of progress and taking the responsibility of the research/study, Taking responsibility in patient follow-up, collection of relevant biological materials, data management and reporting, execution of the experiments, Taking responsibility in logical interpretation and conclusion of the results, Taking responsibility in necessary literature review for the study, Taking responsibility in the writing of the whole or important parts of the study, Reviewing the article before submission scientifically besides spelling and grammar. ***KAYAALP ML:*** Constructing the hypothesis or idea of research and/or article, Planning methodology to reach the Conclusions, Organizing, supervising the course of progress and taking the responsibility of the research/study, Taking responsibility in patient follow-up, collection of relevant biological materials, data management and reporting, execution of the experiments, Taking responsibility in logical interpretation and conclusion of the results, Taking responsibility in necessary literature review for the study, Taking responsibility in the writing of the whole or important parts of the study, Reviewing the article before submission scientifically besides spelling and grammar.

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Bulgular: Araştırmamız örnekleminde erkek/ kız oranı 5.66'dır. CH belirtilerinin ortaya çıkma yaşı ortalama 2.85±1.17 yıldır. Ortalama başvuru yaşı ise 5.82±2.27 yıl bulunmuştur. Annelerin %20'si gebelik öncesinde karşı cinsiyetten bir çocuk tercihi olduğunu belirtmiş; %20 'si prenatal dönemde stres, %20'si prenatal, %25'i ise postnatal dönemde depresif belirtiler bildirmiştir. Katılımcıların %10'unda düşük riski öyküsü mevcuttur ve %25'i prematüredir. Katılımcıların %55'nin ÇÇDDÖ içe yönelim sorun davranış puanları; %40'nın ise dışa yönelim sorun davranış puanları klinik eşiğin üzerinde yer almıştır.

Sonuç: Ergenlik öncesi dönemde, kız çocuklarına kıyasla daha fazla erkek çocuğu CH belirtileri ile kliniğimize yönlendirilmiştir. Ülkemizde CH belirtileri ile ilk başvuru yaşı batı ülkelerinde göre daha düşük bulunmuştur. CH olan çocuklarda ruhsal işlevsellik düşük bulunmuştur. CH olan çocuklarda yaşanan ruhsal sorunların CH'nun kendisinin yanı sıra karşı cinsiyet ilgileri ve davranışlarına karşı toplumsal tutumların da etkili olduğu düşünülmüştür.

Anahtar Sözcükler: Çocuk, Cinsiyet Hoşnutsuzluğu, Cinsiyet Kimliği

INTRODUCTION

The number of gender variant children and adolescents has augmented since the 2000s all over the World (1). Gender variant is a broad term referring to the individuals whose experience of gender is on a continuum of possibilities beyond the binary understanding of gender (2). Gender nonconforming is a related term used to describe individuals whose gender identity, role, or expression differs from the cultural norms prescribed for their birth-assigned sex. Gender dysphoria refers to the distress that is caused by an incongruence between an individual's gender identity and that individual's sex assigned at birth. Some but not all gender nonconforming people experience gender dysphoria (3).

Gender dysphoria was formerly referred to as 'gender identity disorder (GID)' and placed in the chapter 'Sexual and Gender Identity Disorders' in the DSM-IV with distinct criteria for children and adolescents (4). The diagnostic label has changed to 'Gender Dysphoria (GD)' in the DSM-V with significant changes mainly to avoid stigmatizing effect of the diagnosis. Furthermore, the DSM-V defines gender dysphoria in children as a marked incongruence between one's experienced/ expressed gender and assigned gender distinguishing from DSM IV which rather emphasizes cross-gender identification (4–6). A strong desire to be of the other gender or an insistence that one is the other gender or some alternative gender different from one's assigned gender is a prerequisite criterion for a DSM V diagnosis. Other behavioral features include a strong preference for cross-dressing or simulating the opposite sex attire, for wearing clothing of the opposite sex, for cross-gender roles in make-believe play or fantasy play, and the toys, games, or activities stereotypically used or engaged in by the other gender, for the playmates of the other gender, and a strong rejection of typical toys, games, and activities of the assigned gender, a strong dislike of one's sexual anatomy, and a strong desire for the physical sex characteristics that match one's experienced gender (5).

There is no epidemiologic study assessing the prevalence of GD or former label GID in children with rigorous methodology (7). An indirect data with respect to cross-gender behavior/ identification in children comes from the standardization studies of the Child Behavior Checklist (CBCL), a valid measure of problem behavior in children. In the original version, there were two items pertaining to gender nonconforming behavior: Item 5 ("Behaves like the opposite sex") and Item 110 ("Wishes to be the opposite sex") rated on a 0–2-point scale (1/somewhat or sometimes true; 2-/very true or often true). For nonreferred boys aged between 4-11 years, 3.8% of parents endorsed Item 5 as somewhat or sometimes true and 1.0% as very true or often true. In nonreferred girls, comparable percentages were 8.3% and 2.3% respectively. For Item 110, 1% of the nonreferred boys received 1 point and 0% received 2 points. 2.5% of the nonreferred girls received 1 point and 1% received 2 points for the same item (7). Zucker (7) reported that in the 1991 CBCL standardization sample 1% of parents of 4- to 11-year-old non-referred boys and girls endorsed the item pertained to cross-gender identity. In the 1999 standardization sample of the CBCL, for children aged 6–12 years, less than 1% of parents of non-referred boys and 1.2% of non-referred girls rated this item as either 'somewhat or sometimes true' or 'very true or often true' (7). In a Dutch twin sample, the prevalence of cross-gender behavior as evaluated by a maternal report of behaving like or wishing to be the other sex was 3.2% and 5.2% for 7-year-old boys and girls respectively and decreased to 2.4% and 3.3% for 10-year-old boys and girls (8).

There is scarce evidence on clinical and demographic characteristics of gender nonconforming prepubertal children, yet the majority of the existing research is conducted in western countries (9,10). In Turkey, there is few research on GD in children and adolescents; of those only two have study samples that include prepubertal children; however, the mean age of the participants in these studies is considerably higher (11–13). Therefore, in this study, we aim to describe the demographic and clinical characteristics and psychological functioning of Turkish children aged between 3-12 years presenting with GD symptoms.

MATERIAL and METHODS

The study was conducted between May 2009 and February 2010. The study group included 20 patients (17 males, 3 females) aged between 3-12 who were admitted to Istanbul University, Cerrahpasa Faculty of Medicine, Child and Adolescent Psychiatry Department outpatient clinic with complaints of gender nonconformity. 10 patients (7 males, 3 females) met DSM IV TR criteria for GID (4). When the data

recorded for the study was reviewed after the publication of DSM V, all the patients who met DSM IV TR criteria for GID also met DSM V diagnostic criteria for GD (5). The assessment was based on clinical interview with the parents and direct examination of the child. School teachers were consulted when necessary. The children who did not meet DSM IV TR criteria for GID displayed significant cross-gender behavior and interests that required clinical attention.

A sociodemographic data form was created by the authors to collect data. The data form comprised of questions with regards to age, gender, age at onset of GD symptoms, age at referral for GD symptoms, mother's and father's age at birth, maternal and paternal education, parent's marital status, monthly family income, mother's preference for an opposite sex child prior to conception, mother's prenatal stress, maternal prenatal depressive symptoms, risk of miscarriage, prematurity, and mother's postnatal depressive symptoms. The data form was completed by the researchers via directing question to the parents during the clinical interviews.

The Child Behavior Checklist (CBCL/4–18 years)

In this study, the Child Behavior Checklist (CBCL/4–18) is used to assess behavioral and emotional problems in children presenting with GD symptoms. The CBCL is a valid and reliable screening tool for behavioral and emotional problems and competencies in children and adolescents based on parent reports (14). The adaptation and standardization studies on Turkish children and adolescents were done. The questionnaire consists of 113 items and 9 scales. Parents or parental surrogates are asked to rate each item on a three-point Likert scale. An internalizing problem score is obtained from withdrawn, somatic complaints, and anxious/depressed scales. The sum of delinquent behavior and aggressive behavior scales scores forms externalizing problem score. The remaining four scales pertain to social, thought, attention, and sexual problems. A total score is acquired by summing the scores of all scales. Raw scores are converted to gender and age-standardized T-scores (15,16). A T-score of 67 was accepted as the cut-off point for each syndrome scale and a T-score of 60 for broadband and total problems scales (14).

The study protocol has been approved by Medical Ethics Committee of Istanbul University, Cerrahpasa Faculty of Medicine and Bakirkoy Training and Research Hospital for Psychiatric and Neurological Disorders (12.07.2016/566). The procedures followed in this study were in accordance with the ethical standards of the medical ethics committee and with the Helsinki Declaration of 1964, as revised in 2000 (17). An informed consent was obtained from the parents before participation in the study. All participants were younger than 12 years old; therefore, informed consent of the children was dismissed.

Statistics

In this study, the distribution of variables was classified by computer analysis. The descriptive statistics were calculated by using SPSS version 24 (Statistical Package for the Social Sciences for Windows) program. Demographic and clinical data are reported as mean ± standard deviation, number, and percentage.

RESULTS

20 children (17 males, 3 females) aged between 3-12 years were included in this study. The mean age of the study sample was 6.63±2.43 years (males, 6.91±2.44; females, 5.05±2.04). The boy/girl ratio was 5.66. The mean age at onset of gender nonconforming behaviors was 2.85±1.17 years and the mean age of admission to our clinic was 5.82±2.27 years. There were approximately 3 years between the onset of symptoms and the first admission. All the participants displayed significant cross-gender behavior, cross-gender interests, and preference for friends from the opposite sex. The demographic and family characteristics of the participants are shown in Table I.

The presence of mother's preference for an opposite sex child before conception, mother's prenatal stress, maternal prenatal

Table I: Sociodemographic characteristics of the children with gender dysphoria symptoms.

	Children with GD* symptoms (n=20) n (%); mean±SS
Mothers' age at birth	29.75±5.26
Fathers' age at birth	31.80±5.75
Mothers' educational level	
Primary and secondary school	10 (50)
High school, university, or higher academic degree	10 (50)
Fathers' educational level	
Primary and secondary school	12 (60)
High school, university, or higher academic degree	8 (40)
Parents' marital status	
Married	18 (90)
Divorced	2 (10)
Level of monthly income	
Low	4 (20)
Middle	10 (50)
High	6 (30)

*****gender dysphoria*

Table II: Prenatal, perinatal, and postnatal features.

	Children with GD* symptoms (n=20) n (%)
Mother's preference for an opposite sex child	4 (20)
Mother's prenatal stress	4 (20)
Mother's prenatal depressive symptoms	4 (20)
Risk of miscarriage	2 (10)
Prematurity	5 (25)
Mother's postnatal depressive symptoms	5 (25)

*****gender dysphoria*

Table III: CBCL scale scores of children with gender dysphoria symptoms and number of children with clinically significant problems.

	CBCL-T scores mean±SS	Number of children with T scores in the clinical range n(%)
Withdrawn	57.80±9.17	4 (20)
Somatic complaints	54.80±7.84	3 (15)
Anxiety/depression	61.30±8.43	6 (30)
Social problems	58.30±8.63	4 (20)
Thought problems	60.30±7.28	5 (25)
Attention problems	58.60±6.12	3 (15)
Delinquent problems	57.70±6.67	3 (15)
Aggressive behaviors	57.75±8.41	4 (20)
Sexual problems	67.05±9.99	12 (60)
Internalizing problems	58.70±12.21	11 (55)
Externalizing problems	56.25±9.77	8 (40)
Total	60.50±11.18	12 (60)

depressive symptoms, risk of miscarriage, prematurity, and mother's postnatal depressive symptoms are shown in Table II. Table III shows CBCL withdrawn, somatic complaints, anxiety/depression, social problems, thought problems, attention problems, delinquent problems, aggressive behaviors, sexual problems, internalizing, externalizing, and Total T scores.

DISCUSSION

In this study, we aimed to present demographic, family, and clinical characteristics of Turkish children aged between 3-12 years admitted with symptoms of GD. 50% of the participants met the diagnostic criteria for DSM IV/GID /DSM V/GD. Despite being subthreshold for a DSM diagnosis, the remaining participants were included in the study since they displayed significant stress caused by gender nonconforming behaviors. GD is a dimensional phenomenon that may exist to a greater or lesser degree, and it can manifest itself in various ways. Children with strong gender dysphoric feelings may be very sensitive to their environment and verbalize these feelings only at certain times and under certain circumstances, whereas other children may express their dysphoria more openly (18). Cultural differences across countries might influence behavioral expressions of different gender identities (9). In Turkish culture, gender roles are highly prescriptive and cross-gender behaviors are generally stigmatized. Therefore, one may assume that Turkish children might abstain from expressing their gender dysphoric feelings. Furthermore, follow-up studies show that GD may persist into adulthood not only in children who receive a DSM diagnosis but also in subthreshold cases although persistence rates are considerably higher in threshold children (19).

The boy/girl ratio in referrals to our clinic was 5.66. In a cross-natural cross-cultural comparative analysis by Cohen Kettenis et al. (20), the reported sex ratio in referrals to specialized gender identity clinics was 5.75:1 in Canada and 2.93:1 in the Netherlands. In London, the boy/girl ratio in referrals to a specialized gender identity development service was 3.8:1 (21). However, there has been a shift in the proportion of referral rates for those of the female sex at birth compared with the male (2). After the 2000s the boy/girl ratio in the referrals decreased to 3.41:1 (2008–2011) in Canada, to 1.68:1 in the Netherlands, and to 1.27:1 in London (22-24). The sex ratio in our study is more in line with the reported sex ratio in Canada before the 2000s. The sex ratios for referred children always being in favor of natal boys was considered to be a direct effect of a difference in increased acceptance of masculinity in girls compared to femininity in boys (24). Cohen-Kettenis et al.'s (20) study verifies a decreased tolerance for cross-gender behavior in boys. In their study, boys were referred at a younger age, were less likely to meet DSM criteria compared to natal females, and had lower ratings on the two CBCL gender items. In line with this, all the girls in the current study met DSM IV GID criteria and had more prominent cross-gender features. In Turkey, feminine behaviors in boys are less accepted than masculine behaviors in girls, and therefore the threshold for clinical referral is probably higher for girls than for boys.

The mean age of admission to our clinic was 5.82±2.27 and gender nonconforming behaviors were started approximately 3 years prior to the first admission. In the abovementioned cross-cultural cross-clinic study, the mean age at assessment was 7.2 in the Canadian sample and 8.1 in the Dutch sample. The Canadian sample was about a year younger than the Dutch sample. Additionally, the Canadian sample had a substantially higher percentage of referrals between the ages of 3–4, 4–5, and 5–6 years than did the Dutch sample, and these differences were particularly pronounced for the age intervals of 3–4 and 4–5 years. Between the age intervals of 6–7 and 11–12 years, the Dutch sample had a higher percentage of referrals. According to the authors, sociocultural factors probably best account for the cross-national difference in the age at referral. The Dutch parents were assumed to be less concerned about cross-gender behavior in their children than were parents in the Canadian sample (20). Our study sample is approximately one year younger than the Canadian sample which is presumably associated with stronger anxiety around cross-gender behaviors and interests in Turkish families compared to western families.

Psychological, social, and biological determinants of cross-gender behavior are yet to be elucidated. Structural equation modeling showed that 70% of the variance in the liability of cross-gender behavior could be explained by genetic factors (8) Biological theories suggested that transgender individuals may have brain structure and brain functioning more congruent with their experienced gender. Other studies focused on exposure to prenatal steroids considered to have a role in the brain's sexual differentiation (25–27). Psychosocial factors hypothesized to contribute to the development of cross-gender identification include a maternal wish for a child of the opposite

gender, paternal absence, parental psychological functioning, maternal depression, parent's lack of limit setting with respect to cross-gender behaviors, physical appearance, and anxiety in the child. However, the literature fails to provide consistent evidence to prove associations between any of these psychosocial factors and cross-gender identification (26,28). In our sample 20% of the mothers reported a preference for an opposite sex child prior to conception; 20 % had prenatal stress, 20% had depressive symptoms during the prenatal period, and 25% of the mothers had postnatal depressive symptoms. There was a risk of miscarriage in 10% of our study sample and 25% of children were born prematurely. Since there is no control group in the study, we cannot compare the rates of pre- peri and postnatal factors between children admitted with problems with regard to their gender identity and children with other psychiatric problems or healthy counterparts. On the other hand, recent research suggests that neurodevelopmental disorders such as autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) are common in children and adolescents with GD (13,29–31). Maternal prenatal stress, maternal pre and postnatal depression, risk of miscarriage, and prematurity are risk factors associated with ASD and/or ADHD (32–35). Therefore we suggest that pre, peri, and postnatal factors merit researchers' attention as possible etiological factors shared by GD and neurodevelopmental disorders.

Studies show that the psychological functioning of children referred for GD symptoms is poor. Psychiatric problems such as anxiety, depression, suicidal behaviors, self-harm, eating disorders, ASD, and disruptive disorders are more prevalent in children and adolescents with GD. Literature suggests that in youth experiencing GD, internalizing problems (such as depression, social withdrawal, and anxiety) are more frequent than externalizing problems (such as aggression) (10,13,26,30,36,37). Along with similar lines, 55% of our study sample exceeded the clinical threshold for internalizing problems and 40% exceeded the clinical threshold for externalizing problems in CBCL ratings. The younger age of our study sample might account for high rates of externalizing problems. Our study doesn't have a control group to compare the psychological functioning of children with GD symptoms versus healthy controls. However, in a large national mental health survey of Turkish children aged between 4-18, mean scores in CBCL withdrawn, somatic complaints, anxiety/depression, social problems, thought problems, attention problems, delinquent problems, aggressive behaviors scales, and mean internalizing, externalizing, and Total T scores were 2.7, 1.0, 4.8, 1.8, 0.5, 3.4, 1.2, 5.5, 8.4, 6.9, and 24.0 respectively (38). In Erol and Simsek's study, 16.7% of children and adolescents were in the borderline range and 11.3% were in the clinical range (38). Our results suggest that Turkish children with GD symptoms have poorer psychological functioning compared to the general population. Previous research emphasizes poor peer relations, peer bullying, family rejection, discrimination, and prejudice in society as predictors of increased rates of psychological problems in children and adolescents with GD symptoms (26,37,39,40). In Turkey, social intolerance for cross-gender behaviors might be greater compared to western societies where these studies on the psychological well-being of children and adolescents with GD are conducted (10). Therefore, one might expect increased rates of psychological problems in Turkish children with GD compared to those in western countries.

Our results show that there are more prepubertal boys than girls referred for GD symptoms and the age at referral is younger compared to western countries. In addition, findings of this study indicate that similar to their western peers and Turkish adolescents, Turkish children with GD have poorer psychological functioning (10,12). Although the lack of a control group and small sample size in this study restrain us from drawing any conclusion, our results suggest that future research may focus on prenatal and obstetric problems and maternal prenatal stress as possible biological determinants of GD. As mentioned, the lack of a control group and small sample size are significant limitations of this study; however, considering that GD is a rare disorder, and the literature is scarce on information with regard to children and adolescents referred for GD symptoms outside western cultures, we believe that our study might provide background data for further research on children with GD from a different culture, and biological and psychological determinants of gender variant behaviors in children.

REFERENCES

1. d'Abrera JC, D'Angelo R, Halasz G, Prager S, Morris P. Informed consent and childhood gender dysphoria: emerging complexities in diagnosis and treatment. Australas Psychiatry 2020;28:536–8.
2. Becker I, Ravens-Sieberer U, Ottová-Jordan V, Schulte-Markwort M. Prevalence of adolescent gender experiences and gender expression in Germany. J Adolesc Heal 2017;61:83–90.
3. Bonifacio JH, Maser C, Stadelman K, Palmert M. Management of gender dysphoria in adolescents in primary care. CMAJ 2019;191:E69–75. Available from: URL:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6336471/pdf/1910e69.pdf. Accessed: 16 September 2022.
4. American Psychiatric Association. Diagnostic and statistical manual of mental disorders-Text Review: DSM-4-TR. Washington, DC: American Psychiatric Association, 2000. https://doi.org/10.1176/appi.books.9780890423349
5. American Psychiatric Association. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington, VA: American Psychiatric Association, 2013. https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425787
6. Akgül GY, Ayaz AB. Gender dysphoria in children and adolescents/Çocuk ve ergenlerde cinsiyet hoşnutsuzluğu. J Ist Faculty Med 2021;84:S4–10.
7. Zucker KJ. Epidemiology of gender dysphoria and transgender identity. Sex Health 2017;14:404–11.
8. Van Beijsterveldt CEM, Hudziak JJ, Boomsma DI. Genetic and environmental influences on cross-gender behavior and relation to

behavior problems: A study of Dutch twins at ages 7 and 10 years. Arch Sex Behav 2006;35:647–58.

9. Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, De-Cuypere G, Feldman J, et al. Standards of care for the health of transsexual, transgender and gender nonconforming people, version 7. Int J Transgenderism 2012;13:165–232.
10. Frew T, Watsford C, Walker I. Gender dysphoria and psychiatric comorbidities in childhood: a systematic review. Aust J Psychol 2021;73:255–71.
11. Akgül GY, Ayaz AB, Yildirim B, Fis NP. Autistic traits and executive functions in children and adolescents with gender dysphoria. J Sex Marital Ther 2018;44:619–26.
12. Akgül GY, Budak BY, Ayaz AB, Fiş NP. Psychiatric Follow-up of Adolescents with Gender Dysphoria: Marmara University Faculty of Medicine Child Psychiatry Clinic Experience/Cinsiyet Hosnutsuzlugu Olan Ergenlerin Psikiyatrik Izlemleri: Marmara Universitesi Tip Fakultesi Cocuk Psikiyatri Klinigi. Turkish J Child Adolesc Ment Heal 2020;27:156–62.
13. Yildirim B, Fis NP, Akgul GY, Ayaz AB. Gender dysphoria and attention problems: Possible clue for biological underpinnings. Psychiatry Clin Psychopharmacol 2017;27:283–90.
14. Achenbach T. Manual for Child Behavior Checklist/ 4-18 and 1991 Profile. Burlington: University of Vermont, Department of Psychiatry, 1991.
15. Erol N, Arslan B, Akçakın M. The adaptation and standardization of the Child Behavior Checklist among 6-18 years old Turkish Children. In: Sergeant J (ed). Eunethydis: European Approaches to Hyperkinetic Disorder. Zürih: Fotorotar, 1995:97–113.
16. Erol N, Şimsek Z. Çocuk ve gençlerde ruh sağlığı: yeterlik alanları, davranış ve duygusal sorunların dağılımı. In: Erol N, Kılıç C, Ulusoy M, Keçeci M, Şimşek Z (eds). Türkiye Ruh Sağlığı Profili Raporu. Ankara: Eksen Yayıncılık, 1998.
17. World Medical Association. World Medical Association Declaration of Helsinki. Ethical principles for medical research involving human subjects. Bull World Health Organ 2001;79:373-4.
18. de Vries ALC, Cohen-Kettenis PT. Clinical management of gender dysphoria in children and adolescents: The Dutch approach. J Homosex 2012;59:301–20.
19. Singh D, Bradley SJ, Zucker KJ. A Follow-Up Study of Boys With Gender Identity Disorder. Front Psychiatry 2021;12:632784. Available from: URL:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8039393/pdf/fpsyt-12-632784.pdf. Accessed: 1 July 2022.
20. Cohen-Kettenis PT, Owen A, Kaijser VG, Bradley SJ, Zucker KJ. Demographic characteristics, social competence, and problem behavior in children with gender identity disorder: A cross-national, cross-clinic comparative analysis. J Abnorm Child Psychol 2003;31:41–53.
21. Di Ceglie D, Freedman D, McPherson S, Richardson P. Children and adolescents referred to a specialist Gender Identity Development Service: Clinical features and demographic characteristics. Int J Transgenderism 2002;6:97-103.
22. Wood H, Sasaki S, Bradley SJ, Singh D, Fantus S, Owen-Anderson A, et al. Patterns of referral to a gender identity service for children and adolescents (1976-2011): Age, sex ratio, and sexual orientation. J Sex Marital Ther 2013;39:1–6.
23. Steensma TD. From gender variance to gender dysphoria: Psychosexual development of gender atypical children and adolescents. (Doctoral dissertation). Amsterdam:Vrije Universiteit 2013.
24. de Graaf NM, Carmichael P, Steensma TD, Zucker KJ. Evidence for a Change in the Sex Ratio of Children Referred for Gender Dysphoria: Data From the Gender Identity Development Service in London (2000–2017). J Sex Med 2018;15:1381–3.
25. Skordis N, Kyriakou A, Dror S, Mushailov A, Nicolaides CN. Gender dysphoria in children and adolescents: an overview. Hormones 2020;19:267–76.
26. Turban JL, Ehrensaft D. Research Review: Gender identity in youth: treatment paradigms and controversies. J Child Psychol Psychiatry 2018;59:1228–43.
27. 2Martinerie L, Condat A, Bargiacchi A, Bremont-Weill C, De Vries MC, Hannema SE. Management of endocrine disease: Approach to the management of children and adolescents with Gender Dysphoria. Eur J Endocrinol 2018;179:R219–37.
28. Claahsen - van der Grinten H, Verhaak C, Steensma T, Middelberg T, Roeffen J, Klink D. Gender incongruence and gender dysphoria in childhood and adolescence—current insights in diagnostics, management, and follow-up. Eur J Pediatr 2021;180:1349–57.
29. Hilton MN, Boulton KA, Kozlowska K, McClure G, Guastella AJ. The co-occurrence of neurodevelopmental disorders in gender dysphoria: Characteristics within a paediatric treatment-seeking cohort and factors that predict distress pertaining to gender. J Psychiatr Res 2022;149:281–6.
30. Øien RA, Cicchetti DV, Nordahl-Hansen A. Gender Dysphoria, Sexuality and Autism Spectrum Disorders: A Systematic Map Review. J Autism Dev Disord 2018;48:4028–37.
31. Thrower E, Bretherton I, Pang KC, Zajac JD, Cheung AS. Prevalence of Autism Spectrum Disorder and Attention-Deficit Hyperactivity Disorder Amongst Individuals with Gender Dysphoria: A Systematic Review. J Autism Dev Disord 2020;50:695–706.
32. Wang C, Geng H, Liu W, Zhang G. Prenatal, perinatal, and postnatal factors associated with autism: A meta-analysis. Medicine (Baltimore) 2017;96:e6696. Available from: URL:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5419910/pdf/medi-96-e6696.pdf Accessed: 20 June 2022.
33. Chen LC, Chen MH, Hsu JW, Huang KL, Bai YM, Chen TJ, et al. Association of parental depression with offspring attention deficit hyperactivity disorder and autism spectrum disorder: A nationwide birth cohort study. J Affect Disord 2020;277:109–14.
34. Manzari N, Matvienko-Sikar K, Baldoni F, O'Keeffe GW, Khashan AS. Prenatal maternal stress and risk of neurodevelopmental disorders in the offspring: a systematic review and meta-analysis. Soc Psychiatry Psychiatr Epidemiol 2019;54:1299–309.
35. Kian N, Samieefar N, Rezaei N. Prenatal risk factors and genetic causes of ADHD in children. World J Pediatr 2022;18:308–19.
36. Reilly M, Desousa V, Garza-Flores A, Perrin EC. Young Children With Gender Nonconforming Behaviors and Preferences. J Dev Behav Pediatr 2019;40:60–71.
37. Dora M, Grabski B, Dobroczyński B. Gender dysphoria, gender incongruence and gender nonconformity in adolescence – Changes and challenges in diagnosis. Psychiatr Pol 2021;55:23–37.
38. Erol N, Simsek ZT. Mental Health of Turkish Children: Behavioral and Emotional Problems Reported By Parents, Teachers, and Adolescents. In: International perspectives on child and adolescent mental health. Vol 1. Elsevier 2000:223–47.
39. Cartaya J, Lopez X. Gender dysphoria in youth: A review of recent literature. Curr Opin Endocrinol Diabetes Obes 2018;25:44–8.
40. Kyriakou A, Nicolaides CN, Skordis N. Current approach to the clinical care of adolescents with gender dysphoria. Acta Biomed 2020;91:165–75.