

Gender dysphoria/gender incongruence of pre or post-pubertal onset: differences in psychiatric comorbidities and socio-familial determinants. A cross-sectional study

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Abstract

Introduction: The increase in the number of adolescents referred to specialized gender identity clinics generated an international phenomenon, that has also been experienced at the Outpatient Adolescence Service of Departamento de Pedopsiquiatria e Saúde Mental da Infância e Adolescência, Centro Hospitalar Universitário do Porto. **Objective:** To assess whether there are differences in psychiatric co-morbidities and other socio-familial determinants in pre- or post-pubertal-onset of Gender Dysphoria/Gender Incongruence. **Methods:** Selection of a convenience sample of adolescents assessed for Gender Dysphoria/Gender Incongruity at the Outpatient Adolescence Service of Departamento de Pedopsiquiatria e Saúde Mental da Infância e Adolescência, Centro Hospitalar Universitário do Porto, from January 2018 to December 2021 that was divided into two groups: pre- and post-pubertal onset. Data were analyzed with SPSS, version 26. **Results:** Forty-one adolescents with cross-gender behaviors, 28 (68.3%) females, and 13 (31.7%) males were included. Pre-pubertal cross-gender behavior was observed in 21 (51.2%) adolescents. The prevalence of psychiatric co-morbidities was 65.9% and the prevalence of social-family risk factors was 63.4%, without statistical significant differences between the two subgroups. **Discussion:** The small sample is an important limitation. Even so, results are in line with the literature, concerning the increasing number of birth-designated females presenting for care. However, there were no differences in this sample, so it is not possible to infer differences between the two subgroups regarding the compared parameters. We consider essential further studies to better understand this phenomenon and its particularities at a stage of development that is in itself turbulent.

Keywords: Adolescent. Gender incongruence. Gender dysphoria. Puberty.

Disforia de género/incongruência de género de início pré ou pós-pubertário: diferenças nas comorbilidades psiquiátricas e outros determinantes sócio-familiares. Um estudo transversal

Resumo

Introdução: O aumento do número de adolescentes encaminhados para clínicas/programas especializados em “Identidade de Género” fez desta problemática, um fenómeno mundial. O aumento de casos tem sido experienciado, também no Serviço

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Received: 17-11-2022

Accepted: 03-05-2023

<https://pjp.spp.pt>

Available online: 01-10-2023

Port J Pediatr. 2023;54(4):236-242

DOI: [10.24875/PJP.M23000047](https://doi.org/10.24875/PJP.M23000047)

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de Adolescentes do Departamento de Psiquiatria e Saúde Mental da Infância e da Adolescência, Centro Hospitalar Universitário do Porto. **Objetivo:** Avaliar se existem diferenças nas comorbilidades psiquiátricas e outros determinantes sociofamiliares na Disforia de género/Incongruência de género de início pré ou pós- pubertário. **Métodos:** Foi selecionada uma amostra de adolescentes avaliados em consulta de Pedopsiquiatria por Incongruência/Disforia de Género no Departamento de Pedopsiquiatria e Saúde Mental da Infância e Adolescência, Centro Hospitalar Universitário do Porto, entre janeiro de 2018 e dezembro de 202. Esta amostra foi dividida em dois subgrupos: início pré e pós-pubertário. Os dados foram submetidos a análise estatística com o programa SPSS (versão 26). **Resultados:** 41 adolescentes com comportamentos de género cruzado em que 28 (68,3%) eram do sexo feminino e 13 (31,7%) do sexo masculino. Comportamentos pré-púberes de género cruzado foram observados em 21 (51,2%) adolescentes. A prevalência de comorbilidades psiquiátricas foi de 65,9% e a prevalência de fatores de risco sociofamiliares foi de 63,4%, sem diferenças estatisticamente significativas entre os 2 subgrupos. Dados analisados com SPSS, versão 26. **Discussão:** Uma limitação importante deste estudo é o pequeno tamanho da amostra. Mesmo assim, os resultados estão de acordo com o que vem sendo descrito na literatura, no que diz respeito ao crescente número de mulheres que se apresentam com esta problemática. Apesar disso, não foram encontradas diferenças estatisticamente significativas nos subgrupos, pré- e pós-pubertário, pelo que não é possível inferir acerca das diferenças nas comorbilidades psiquiátricas e outros determinantes sócio-familiares. Consideramos necessário e imprescindível a realização de mais estudos para melhor compreender este fenómeno e as suas particularidades numa fase de desenvolvimento por si turbulenta.

Palavras-chave: Adolescente. Incongruência de género. Disforia de género. Puberdade.

Keypoints

What is known

- There has been a progressive de-pathologization of gender diversity issues, and the disease classification manuals used in mental health have been in line with this trend.
- At some point in childhood, many children experiment with gender expression and roles, and in some children cross-gender behavior and expressions are more consistent, persistent, and insistent than among peers.
- Trans adolescents have higher rates of depression, suicidal behavior, and self-harm, as well as eating disorders.

What is added

- We found a high percentage of adolescents who present with GD/GI in the absence of manifestations of GD/IG in childhood.
- No differences were found between pre- and post-pubertal GD/GI of pre- or post-pubertal onset.
- Facing the unpredictability of DG/GI evolution, gender questioning, and gender role explorations along the other developmental tasks, the authors suggests that a non-binary or gender fluid identity may be more suitable for some adolescents.

Introduction

Exploring gender and sexual behaviors is a normal part of child development¹⁻⁷.

Gender identity is the subjective notion that someone has of themselves as being male or female, without this being dependent on the genitalia or sex chromosomes they present⁸⁻¹⁰. The construction of this dimension takes place progressively along the psychological and sexual development of each person. It is important to emphasize that gender identity is not a dichotomous/binary conceptualization (male vs. female), as it was thought in the past, but a dimensional concept (continuum between female and male)¹¹⁻¹⁸.

Over the past several years, there has been an increasing number of adolescents referred to specialized gender identity clinics/programs, which made this an international phenomenon. Alongside this increase, there has been a progressive de-pathologization of

gender diversity issues, and the disease classification manuals used in mental health have been in line with this trend, changing the terminology. Currently, gender dysphoria (GD) has replaced Gender Identity Disorder in the DSM-5, emphasizing the malaise and suffering experienced by the marked incongruity of gender and assigned sex. ICD-11 introduces the terminology of Gender Incongruence (GI) in Childhood and Adolescence and no longer considers GI a mental disorder by eliminating it from the chapter of mental disorders¹⁹⁻²⁶.

It has long been known that there are at least two developmental pathways that lead to GD. In early-onset gender dysphoria, the signs and symptoms are apparent from an early age (e.g., the preschool years, if not even a bit earlier). In late-onset gender dysphoria, the signs and symptoms do not appear until puberty, if not later. In recent years, clinicians have seen an ever-increasing number of post-puberty cases of GD in

birth-assigned females with rapid-onset clinical manifestations¹⁴, termed “rapid-onset gender dysphoria” (ROGD)^{12,27-31}.

Literature suggests that in comparison to their peers, trans adolescents have higher rates of depression, suicidal behavior, and self-harm, as well as eating disorders¹⁴.

Despite the increasing numbers of adolescents seeking gender reassignment treatment, scientific knowledge is still very scarce^{20,32,33}. So, with this work the authors intend to characterize the population of adolescents seeking GD treatment at the Adolescence Outpatient Service of Departamento de Pedopsiquiatria e Saúde Mental da Infância e Adolescência, Centro Hospitalar Universitário do Porto (DPSMIA, CHUPorto) and compare the GD of pre-pubertal onset with that of post-pubertal onset, regarding co-morbidities and other socio-familial determinants.

Methods

A retrospective and longitudinal study was developed at the Adolescence Outpatient Service of DPSMIA, CHUPorto, which serves patients with psychiatric illness, from 12 to 18 years of age. All adolescents referred and assessed for gender incongruence or dysphoria from January 2018 to December 2021 were included in the study. Based on empirical conclusions, the authors established the following hypotheses:

- Psychiatric co-morbidities are more frequent in adolescents with prepubertal GD.
- Social and familiar risk factors have a greater impact on prepubertal gender dysphoria.

To study these research hypotheses, the clinical files of users were consulted and the following data were recorded:

- Age at referral date.
- Gender assigned at birth.
- Age of menarche.
- Age of appearance of cross-gender interests and/or behaviors: prepubertal or postpubertal.
- Previous psychiatric care (not related to gender issues).
- Psychiatric co-morbidities: social anxiety disorder, depressive disorder, non-suicidal self-injury (NSSI), Attention Deficit Hyperactivity Disorder (ADHD), Eating Behavior Disorder (EBD), conduct disorder, autism spectrum disorder (ASD), other anxiety disorders, substance use disorder, other childhood emotional disorders, no psychopathology.
- Socio-family risk factors: history of sexual abuse, maltreatment, neglect, immigration and age at the

time of immigration, integration in the peer group, history of bullying, intra-family violence, parental detention, parental psychopathology.

- Type of family (nuclear, extended, single-parent, reconstructed, institutionalized).

The project was approved by the ethical committee of our institution. All the information was anonymous and confidential.

Statistical analysis

Data were analyzed with SPSS, version 26. Descriptive statistics were presented as frequencies (n) and percentages (%) for categorical variables, means (M), and standard deviations (SD) for continuous variables with symmetrical distributions. Univariate logistic regressions were implemented to assess the associations with pre-pubertal cross-gender behavior. Chi-square tests and Pearson correlations were used to assess sample differences. Odds Ratios (OR) were estimated as effect size. Adjusted ORs were not estimated because due to the results no multivariate logistic regressions were implemented. Significance was considered for $p < 0.05$ and marginal significance for $p < 0.10$.

Results

A total of 41 adolescents with cross-gender behaviors were assessed for gender incongruence/dysphoria in our department, 28 (68.3%) females and 13 males (31.7%) were included in this study. Pre-pubertal cross-gender behavior was observed in 21 (51.2%) of adolescents. We also noticed an increasing number of post-pubertal cross-gender behavior after the COVID-19 Pandemic, however this was not an aim of our study. Previous psychiatric care was present in 18 (43.9%) adolescents. The prevalence of psychiatric co-morbidities was 65.9% and the prevalence of social-family risk factors was 63.4%. The family type was nuclear ($n = 21$, 51.2%) and non-nuclear ($n = 20$, 48.8%). The mean age at referral was 15.12 (SD = 1.44), ranging from 10 to 17 years old. The mean age at the onset of cross-gender behavior was 8.70 (SD = 4.82), with a minimum of 2 and a maximum of 16 years old. The mean age at menarche for females was 11.36 (SD = 1.19), ranging from 8 to 14 years old. Seven adolescents in this sample were immigrant. The mean years of immigration were 12.38 (SD = 0.77), ranging from 8 to 14 years (Table 1). As described in the table, psychiatric co-morbidities were found in 27 cases, with more than 1 in 3 cases. Thus, the presence of depressive disorders was observed in

Table 1. Sample characteristics

	Descriptive statistic
Gender at birth	
Female	28 (68.3%)
Male	13 (31.7%)
Pre-pubertal cross-gender behavior	
No	20 (48.8%)
Yes	21 (51.2%)
Previous psychiatric care	
No	23 (56.1%)
Yes	18 (43.9%)
Psychiatric co-morbidities	
No	14 (23.1%)
Yes	27 (65.9%)
Social-family risk factors	
No	15 (36.6%)
Yes	26 (63.4%)
Type of family	
Nuclear	21 (51.2%)
Non-nuclear	20 (48.8%)
Age at referral (n = 41)	15.12 (1.44) [10-17]
Age at menarche (28 females)	11.36 (1.19) [8-14]
Age at onset of cross-gender behavior (n = 41)	8.70 (4.82) [2-16]
Age at the time of immigration (n = 7)	10.71 (2.36) [8-14]

Table 2. Results for univariate and multivariate logistic regressions considering pre-pubertal cross-gender behavior as outcome

	Pre-pubertal cross-gender behavior		Univariate		Multivariate		
	No (n = 20)	Yes (n = 21)	OR	p-value	aOR	p-value	95% CI
Gender at birth							
Female	15 (75.0%)	13 (61.9%)	1	1	-	-	-
Male	5 (25.0%)	8 (38.1%)	1.85	0.370	-	-	-
Previous psychiatric care							
No	12 (60.0%)	11 (52.4%)	1	1	-	-	-
Yes	8 (40.0%)	10 (47.6%)	1.36	0.624	-	-	-
Psychiatric co-morbidities							
No	7 (35.0%)	7 (33.3%)	1	1	-	-	-
Yes	13 (65.0%)	14 (66.7%)	1.08	0.910	-	-	-
Social-family risk factors							
No	7 (35.0%)	8 (38.1%)	1	1	-	-	-
Yes	13 (65.0%)	13 (61.9%)	0.88	0.837	-	-	-
Type of family							
Nuclear	11 (55.0%)	10 (47.6%)	1	1	-	-	-
Non-nuclear	9 (45.0%)	11 (52.4%)	1.34	0.637	-	-	-
Age at referral	15.10 (1.38)	15.14 (1.53)	1.02	0.923	-	-	-
Age at menarche	11.35 (1.18)	12.00 (1.10)	1.76	0.096	-	-	-

9, as well as ADHD, anxiety disorders in 8, self-injurious behaviors in 5, conduct disorder in 1, and school refusal in 1. Socio-family risk factors were found in 26 cases, with more than one risk factor being found in 6 of the

26 cases. Thus, the presence of poor integration in the peer group was observed in 13, intra-family violence in 10, immigration in 7, and institutionalization in 1 case. When we divided the sample considering pre-pubertal

cross-gender behaviour, we conclude that there were not statistical differences in both groups regarding psychiatric co-morbidities and social-family risk factors (Table 2).

Discussion

The prevalence of GD is hampered by the social stigma of gender diversity and lack of a standardized definition, but we do not doubt that adolescent referrals for GD/GI are increasing internationally, and our department is no exception. The growing social acceptance, wider access to information, and opportunities for contact through social media have played a role in this process^{19,20,34,35}. There are several factors that support the idea of social and peer contagion for a type of adolescent-onset or late-onset gender dysphoria. Firstly, there is an increasing number of friends within peer groups who identify as transgender. Secondly, there seems to be a pattern of outbreaks of transgender identification within these peer groups. Additionally, a significant percentage of peer groups have a majority of members identifying as transgender. Finally, the dynamics of peer groups observed also contribute to the plausibility of social and peer contagion as a factor in the development of this type of gender dysphoria.

In these cases, the development of gender dysphoria begins suddenly during or after puberty in an adolescent or young adult who would not have met criteria for gender dysphoria in childhood³⁶⁻³⁸. Since the 2000s, several gender identity services for minors across western countries have reported an increase in referrals, and several studies suggest that the average age of the first visit to a specialist is becoming lower. Simultaneously, the earlier overrepresentation of birth-assigned males was equaled or turned to an overrepresentation of birth-assigned females, suggesting strong generalizability³⁹.

Although the small sample of this study is an important limitation, we can assume that the clear majority of birth-designated females presenting for care is in line with what has been described in the literature. Chi-square tests and Pearson correlations were used to assess sample differences, which were not found, so it is not possible to infer differences between the two subgroups regarding the compared parameters (unconfirmed hypotheses).

In our study we found an almost equal number of adolescents with prepubertal GD (inferred by the report of prepubertal cross gender behavior) and postpubertal GD. It is described that early onset GD during childhood is more frequent in males at birth, while later

onset during adolescence is more frequent in girls at birth^{12,14}. In our study, a higher percentage of females assigned at birth was found in the postpubertal group (75% versus 61.9%) although without statistical significance, which may be related to the sample size. There has recently been described an increasing number of postpubertal cases of birth-assigned females with gender incongruence/dysphoria with rapid onset clinical manifestations, without having a history of gender variance during childhood, a phenomenon described as "rapid-onset gender dysphoria"^{12,14}. This is in line with our findings of more postpubertal cases of GD in birth-assigned females. Concerning the main goal of this study, no differences were found between Gender Dysphoria/Gender Incongruence of pre- or post-pubertal onset regarding psychiatric co-morbidities (65% versus 66.7%) and social family factors. In our study population the prevalence of psychiatric co-morbidities was 65.9% and the prevalence of social-family risk factors was 65.7%, with emphasis on poor integration in the peer group and intra-family violence.

Based on a variety of measurement approaches, it has been found that adolescents referred for GD have more behavioral and emotional problems than non-clinical adolescent samples, but are more similar when compared to adolescents referred for other mental health concerns^{39,40}. Descriptive studies of adolescents referred to specialized gender identity services at different centers in Europe and North America have mainly suggested that 40-45% of them present with clinically significant psychopathology^{17,39,41}. One of the explanations for the elevated rate is that GD has emerged as secondary to another, more "primary" mental health, such as autism spectrum disorder or borderline personality disorder, or as a result of severe trauma (sexual abuse). Another explanation is that GD is inherently distressing, which leads to clinical symptoms such as anxiety or depression⁴². The most common explanation is that the co-occurring mental health issues are simply secondary to factors such as family rejection or social ostracism within the peer group⁴³⁻⁴⁸. In our study, the prevalence of psychiatric co-morbidities was 65.9%, with emphasis on depressive and anxiety behaviors, ADHD, and self-harm. Only one case of conduct disorder was reported and there was no case of ASD. Except for the absence of ASD, these results are in line with international studies that show that the most reported disorders are depression and anxiety disorders with self-harm and suicidal ideation/behavior also common, whereas conduct disorder and antisocial development do not appear common in this population¹². Likewise, community-level information suggests

that transgender-identifying youths present four to six times more often with depression and three to four times more often with self-harm and/or suicidal behavior compared with cisgender adolescents⁴⁹⁻⁵⁵.

In our knowledge, this is the first article that characterized the population referred to and assessed at the department by DG/IG and compared the GD of pre-pubertal onset with that of post-pubertal onset, regarding co-morbidities and other socio-familial determinants. Despite the small sample, we consider that this is a relevant study, as it reveals the reality of our department, showing some similarities with what has been described in the literature.

Although we cannot predict the evolution of DG/GI in pediatric age, this work emphasizes the high percentage (almost half) of adolescents who present with GD/GI in the absence of manifestations of GD/IG in childhood. Because of this unpredictable evolution, at pediatric age, the diagnosis must be carefully established.

At Adolescent Outpatient Service of DPSMIA, CHUPorto we consider that, in some dubious cases, gender identity issues may be, after all, an identity crisis, in which the gender questioning and gender role exploration go along with the exploration of other identity issues. A non-binary transgender identity may be more suitable for some of these adolescents, given the possibility of some fluidity in gender identity. And that's why we as mental health professionals adopt the non-binary gender conceptualization.

This is a specific and unique phenomenon, that can be difficult for clinicians to stay current with guidelines in a rapidly changing field and, as a consequence, poses numerous challenges in terms of diagnoses and therapy. That's why we consider it necessary to carry out further studies to better understand this phenomenon and its particularities at a stage of development that is turbulent, per se.

Funding

None.

Conflicts of interest

None.

Ethical disclosures

Protection of human and animal subjects. The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics

committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Use of artificial intelligence for generating text. The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of images, graphics, tables, or their corresponding captions.

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