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Gender Dysphoria in the Pediatric Population: Initial Experience of a Transdisciplinary Group

Disforia de género en la población pediátrica: experiencia inicial de un grupo transdisciplinario

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Abstract

Introduction Although there is an increasing experience in the management of transgender individuals, this has not been thoroughly explored in children. The need to establish a comprehensive and transdisciplinary management is of critical importance. In order to solve this issue, we want to report the results of a cohort of individuals with gender dysphoria (GD) seen by our transdisciplinary group from a social and clinical and health access perspective.

Methods A 10-year retrospective case series of all patients that had been seen by our transdisciplinary team was reviewed. The main demographic characteristics were described, as well as impact variables in terms of diagnosis and treatment of these individuals. A social description of each individual was described. Frequency, distribution, and central tendency measures were evaluated for data presentation. IBM SPSS Statistics for Windows, version 24.0 (IBM Corp, Armonk, NY) software was used.

Results Four cases of GD were included. Three had male to female dysphoria and one female to male. The median reported age of GD awareness was 6 years old (between 4 and 8 years old), and the median time between GD awareness and the 1st medical evaluation was 7 years for all individuals. The median age at gender role expression was 12 years old (between 10 and 14 years old). All patients had already assumed their experienced gender role before the 1st evaluation by our group. The median age at the 1st evaluation by our group was 13 years old (between 10 and 16 years old); three of the patients were evaluated after initiation of puberty. In the present study, individuals with GD demonstrated having health care access barriers for their transition process.

Keywords
- gender dysphoria
- pediatric
- adolescent
- transdisciplinary

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Referral times are high, and individuals with GD are cared after pubertal development, which is related to suboptimal outcomes. The spectrum of GD is broad, and management must be individualized according to expectations.

Conclusion Individuals with GD face multiple access barriers that limit their possibility of being seen by a transdisciplinary team. This reflects in longer waiting times that negatively impact medical management. Gender dysphoria is a wide spectrum, and individuals should be evaluated individually by a transdisciplinary team.

Resumen

Introducción En las ultimas décadas se ha ganado más experiencia en el manejo de individuos con disforia de genero (DG). Sin embargo, en la población pediátrica esto aun no se ha explorado completamente. La necesidad de ofrecer un manejo cuidadoso y transdisciplinario es de gran importancia. El objetivo de este estudio es presentar la experiencia de nuestro grupo transdisciplinario (GT) en el abordaje de pacientes con DG desde el punto de vista medico y social.

Materiales y métodos Se realizó un análisis descriptivo de los casos de DG en menores de 18 años tratados en los últimos 10 años por el GT de Desórdenes del Desarrollo e Identidad Sexual. Se usaron medidas de frecuencia y tendencia central para la presentación de datos mediante el programa SPSS, versión 24.0. Se realizó un análisis descriptivo de las variables: familia y dinámica social; evaluación psiquiátrica; expectativas; barreras de acceso; y abordaje del GT.

Resultados Se presentan cuatro casos de DG, tres hombre-mujer y uno mujer-hombre. La edad a la primera sensación de disforia (PSD) fue en promedio 5,7 años, y el tiempo medio entre la PSD y la primera evaluación médica (PEM) fue de 6,25 años. La edad promedio a la primera evaluación por el grupo (PEG) fue de 13,25 años; 3 individuos tenían pubertad avanzada y 1, incipiente. Dos individuos habían recibido atención médica antes de la PEG. Se identificó que, al momento de la valoración por el grupo, los individuos contaban con el apoyo de sus familiares, y el entorno escolar era cada vez más incluyente; en ninguno se identificó enfermedad psiquiátrica, y a todos se indicó acompañamiento por psicoterapia. La expectativa con el proceso fue heterogénea con respecto a procedimientos quirúrgicos, manejos hormonales y rol de género, dependiendo de las características físicas que generaban disforia (caracteres sexuales secundarios, genitales). Las barreras de acceso fueron el desconocimiento de los especialistas en primeras valoraciones y las administrativas. La decisión del grupo con respecto al manejo hormonal y quirúrgico, así como acompañamiento psicológico se individualizó para cada paciente.

Conclusiones Los individuos con DG presentan barreras de acceso a soporte médico para su proceso de transición. Los tiempos de atención son prolongados; por ende, son atendidos después de desarrollar la pubertad, lo cual se relaciona con desenlaces subóptimos. El espectro de la DG es amplio y se debe individualizar el manejo según las expectativas.

Palabras clave
- disforia de género
- pediatría
- adolescentes
- grupo transdisciplinario

Introduction

For the last few decades, considerable progress in gender dysphoria (GD) terminology and understanding about its management has been achieved. The World Professional Association for Transgender Health (WPATH) has promoted the standard of care for transgender individuals.[1] Social acceptance and awareness is increasing, resulting in a higher number of children and adolescents supported by their families, who are now seeking medical support and management.[2]

However, there are still many areas of uncertainty with a lack of standardized and accepted protocols for a proper approach and management of these individuals, especially in the pediatric population.[3,4] This is secondary to several barriers for managing children and adolescents with GD. These barriers are: lack of standardized terminology, lines of treatment, long-term surgical options, legal limitations, and

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scarce information and publications in this age range, with unknown long-term effects.[5–9]

Furthermore, management of these individuals with a transdisciplinary group is of critical importance in order to ensure optimal outcomes.[10,11] Our > 10-year experience as a transdisciplinary group treating disorders of sex development (DSD) has now started to get an increasing number of new referrals of GD children and adolescents.[12] Although two completely different situations, we have decided to implement internal protocols to manage GD individuals with the same transdisciplinary approach as the one for DSD patients.

Here, we want to present a case series study and the experience of managing GD individuals, their families and social environments with our transdisciplinary group.

Methods

After Institutional Review Board (IRB) approval, we performed a retrospective chart review of all GD cases in the pediatric population (individuals < 18 years old) evaluated at our transdisciplinary group at the Hospital Universitario San Ignacio San Ignacio, composed by pediatric endocrinology, pediatric and reconstructive urology, psychiatry, psychology, genetics, and social work specialists.

The included patients were all those seen within the last 10 years. All included individuals should have been presented and discussed at the monthly transdisciplinary meeting of Developmental Disorders and Sexual Identity in order to be enrolled for analysis.[12] Given the lack of international agreement on current available terminology, we followed the self-perception of the patient as the primary diagnostic criteria.[13] Taking these criteria into account, a review of the medical records and database of the group was carried out to determine which individuals should be included and the necessary information. Approval was obtained by the institutional ethics committee.

The variables that were determined for the presentation of the cases were: age at the time of assessment by the group, biological gender (male or female), gender identity (male or female), age at the first sensation of GD, age at the first expression of gender role (with which the patient is identified), age at the first medical evaluation (FME), time between the first sensation of gender dysphoria and the first medical evaluation, age at the first evaluation by the group (FGE), whether this consultation was before or after puberty; the time between the FME and the FGE (time to referral in months), whether they had received treatments before the FGE, adherence to those treatments, physical examination at the time of the FGE (Tanner classification),[14] if they had any psychiatric diagnosis at the time of the FGE, and the follow-up time in months after the FGE. All ages and time intervals are reported in years, unless otherwise specified.

The following variables were reported according to the findings of the interdisciplinary group analysis: type of dysphoria ("male to female" or "female to male"), social and family dynamics, psychiatric assessment, expectations of the individual with the process of affirming gender, access barriers, and approaching the group. If there was missing data, a telephone follow-up was made to collect the pending information.

Frequency, distribution, and central tendency measures were evaluated for the presentation of data. IBM SPSS Statistics for Windows, version 24.0 (IBM Corp, Armonk, NY) software was used.

Results

During the study period, we identified four cases of GD individuals that had been evaluated by our group. Three had male to female dysphoria and one female to male. The median reported age of GD awareness was 6 years old (between 4 and 8 years old), and the median time between GD awareness and the FME was 7 years for all individuals. The median age at gender role expression was 12 years old (between 10 and 14 years old). All patients had already assumed their experienced gender role before the FGE. The median age at the FGE was 13 years old (between 10 and 16 years old); 3 of the patients were evaluated after initiation of puberty, and 3 of them were Tanner 4 at the FME and 1 was Tanner 2. Two patients had evaluation of their GD prior to the transdisciplinary assessment at our institution, and one of them had already started medical management (►**Table 1**. See attachment 1). The description of the cases can be found in ►**Table 2**.

Discussion

Gender dysphoria constitutes a common underreported condition. It is characterized by being a multidimensional phenomenon that is expressed on a very subjective way. Given the variability in terminology, it is difficult to define an accurate prevalence. It has been reported to occur in between ~ 0.17 and 1.3% of adolescents and young adults.[2] For GD individuals, their biological gender and their gender identity (or experienced gender) do not match each other, which is translated in nonconformity and distress.[3,15,16]

The diagnosis of GD in childhood and adolescence is a challenge. The classical diagnostic criteria accepted by the Diagnostic and Statistics Manual of Mental Disorders, 5th edition (DSM-V) are mainly gender incongruence, displayed as the decision to express their experienced gender role early in their lives, as well as dislike for their sexual anatomy and the desire for the sexual characteristics of the "other" gender. However, the term "diagnosis" must only be used for the purpose of allowing medical access to hormonal treatments and surgical interventions, but it should not be misconstrued.[6]

All individuals in our case series expressed awareness of their self-perception and incongruence with their biological gender at an early age. However, the mean time between GD awareness and the FME was 6 years, which means that first time these individuals seek medical support is around the time they begin puberty. Furthermore, the first evaluation by a transdisciplinary group occurred even later, which is why all the individuals were Tanner 4 at the moment of the

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Table 1 Sociodemographic characteristics

Case	Age (years old)	Biological gender	Gender identity	Age at FGDS (years old)	Age at first expression of gender role	Age at FME (years old)	Time between FGDS and FME	FGE		Time between FME and FGE (Time to referral in months)	Medical evaluations prior to FGE	Previous treatments	Adherence to previous treatments	Physical examination at FGE	Previous psychiatric diagnosis	Follow-up (months)
								Age (years old)	Before or after puberty onset							
1	17	Male	Female	6	12	13	7	16	After	36	Psychiatry and endocrinology	Monthly leuprolide (puberty suppression) and daily spironolactone	No	Tanner 4	No	10
2	12	Female	Male	5	11	11	6	11	After	6	Psychiatry and endocrinology	None	–	Tanner 4	No	7
3	16	Male	Female	8	14	14	6	16	After	24	General medicine	None	–	Tanner 4	No	6
4	14	Male	Female	4	10	10	6	10	After	0	None	None	–	Tanner 2	No	44

Abbreviations: FGDS, first sensation of gender dysphoria; FGE, first evaluation by the transdisciplinary group; FME, first medical evaluation.
All ages and time ranges are in years unless otherwise specified.

evaluation by the group, except for one. This finding is of utmost relevance, because most evidence suggests that early hormonal therapy and prevention of "wrong puberty" are the mainstay for the approach of GD children and adolescents. A study of 55 young transgender adults who received proper and early evaluation and were treated with puberty suppression, cross-sex hormones, and gender affirmation surgery at mean ages of 13.6, 16.7 and 20.7 years old, respectively, demonstrated that GD was alleviated and that psychological functioning improved, with results similar or even better than those of same-age young adults from the general population.[17]

Remarkably, most information is obtained and adapted from adult series, which may not rightfully represent the experiences of children and adolescents. It also includes the bias of someone who did not have the opportunity to be treated and supported accordingly. Due to different legislations that prevent them from making decisions before the legal age of adulthood, as well as a discriminating social context, many adult individuals have been exposed to rejection and discrimination, and experience gender affirmation processes on their own, without any psychological or endocrinological support. Also, some are identified due to a history of psychopathological comorbidity, such as substance abuse, depression, anxiety or suicide attempts.[3,10,15,18,19] Early treatment and social and family support may reduce these situations. In our case series, none of the individuals have been diagnosed with any psychiatric disorders. However, in three of them, being already Tanner 4 at the FGE, high rates of distress and anxiety regarding their secondary sexual characteristics and the irreversibility of them are described. Consequently, their main expectation with the process is to surgically remove them.

Early intervention, including prepubertal early hormonal therapy and social and medical support, may have an impact on the desire for gender affirmation surgeries. This suggests that in an appropriately accompanied gender affirmation process, individuals may have better acceptance of their self-perception and their goal would not necessarily be the complete gender affirmation surgery, which again refers to the wide spectrum of GD. It is also important to consider that these individuals who start earlier usually have a supportive social environment, which lessens the impact of discrimination and, once more, could intercede in the vision they have of their own bodies and in the need of additional interventions. This relationship between the start of treatment and surgical need should be studied in future research. Given the scarce information available about hormonal management and long-term implications, we as a group have implemented some preventive follow-up measures, such as bone health evaluation after hormonal treatment has started. Better and more robust follow-up protocols evaluating long-term hormonal therapy implications will need to focus on bone as well as on cardiovascular health.[20]

Another finding is the variability in the manifestations of GD. It is remarkable how the second individual only felt dysphoria for his breasts and menstruation as the external manifestations of his phenotypic gender, but not for the

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Table 2 Analysis of the transdisciplinary approach

Case	Type of Dysphoria	Social and family dynamics	Psychiatric evaluation	Expectations	Health care access barriers	Transdisciplinary group approach	
1	Male to female	Good relationship with parents and sister, who support her. The gender affirmation process has already begun in school, with adequate acceptance.	Logical and coherent reasoning was seen, with high levels of conviction. No depressive thoughts or suicidal ideas were identified. She has adequate adaptive tools without affect disorders.	Her main concern were the secondary sexual characteristics, the global masculine appearance and her genitalia. She hopes to complete the gender affirmation process, including a feminizing genitoplasty, augmentation mammoplasty, and eventually facial feminization procedures (rhinoplasty and laser hair removal).	At the time of evaluation, the group had already established medical treatment with leuprolide; however, adherence was intermittent due to difficulties in acquiring the drug (costs). Access to the transdisciplinary group was an administrative challenge, and the previous medical evaluations with different specialists were inconsistent.	All patients were accepted to start the gender affirmation process with the transdiscioplinary group. In all cases, weekly psychotherapy monitoring was indicated, and bone densitometry was indicated in case of having completed 1 year of pubertal supression. If puberty supression was indicated, treatment with Leuprolide 11.25 mg monthly was indicated.	The group decided to continue with pubertal suppression to prevent the development of additional secondary sexual characteristics and to start estrogen replacement therapy. At the moment, she has completed 4 months of this treatment. After at least 6-12 months of starting the process with the group, she will be reevaluated to define the timing of the feminizing genitoplasty and additional procedures.
2	Female to male	Good relationship with his parents and extended family. Other cases of GD are identified in the family. Everyone supports his gender affirmation process. He has not started a process at school.	Psychiatric disorders were ruled out. A high level of conviction was identified, with no death or depressive thoughts. The presence of several first- and second-degree relatives who also had GD was studied in depth without finding their influence on his behavior. A favorable family environment was considered	His primary discomfort was the mammary glands growth and menstruation. He did not feel genital dysphoria. He hopes to start the pubertal suppression as soon as possible, as well as the hormone replacement therapy with testosterone. Based on the results, he would eventually want to have a reduction mammoplasty. He has not considered other surgical interventions for now.	The lack of experience of the specialists who evaluated him contributed to a late referral to the transdisciplinary group		Puberty suppression was indicated with Leuprolide to prevent menstruation and the development of additional secondary sexual characteristics. Depending on the individual's physical results and wishes, additional medical therapies or surgical interventions could be considered in 6-12 months.
3	Male to female	Adequate social support from her parents and family. Adequate acceptance at school.	No psychiatric pathology was documented. There is no suicidal ideation or depression. Follow-up with psychotherapy has not been constant.	Her primary discomfort was the genital dysphoria, so she hopes to complete the gender affirmation process including hormone therapy and feminizing genitoplasty. Initially, she would like to wait and see the effects of hormonal management to decide on performing an augmentation mammoplasty or voice feminization procedures.	She had difficulties scheduling medical appointments due to barriers imposed by the health insurer. Psychiatric evaluation and follow-up have been intermittent for the same reason. Financial difficulties are the main barrier to access to hormonal therapies		Puberty suppression and estrogen replacement therapy were indicated, and according to the changes in the physical examination, the best moment for feminizing genitoplasty will be evaluated.
4	Male to female	Only child of divorced parents. The relationship with her father is problematic (there is no support for the gender affirmation process). The relationship with her mother was initially problematic and is currently optimal with psychotherapy support. The school acceptance process was torpid, so she was transferred to a smaller school in which she entered with a completely female gender role, for which her social interaction skills have improved significantly.	Initially, a behavioral disorder within the autism spectrum was studied, due to severe difficulties in social interaction. This hypothesis was completely ruled out after an adequate psychological and psychiatric evaluation. After school change, a marked improvement in social skills was observed. Suicidal ideas or depressive thoughts were not identified.	Her expectations with gender affirmation process are constantly evolving. She is clear that she wants to maintain a "feminine" appearance, have breast growth, prevent facial hair growth, and have a feminine voice. She has not yet considered surgical interventions on her genitals and she has not clearly manifested genital dysphoria.	For the first 3 years after seeking medical attention, she and her family had difficulties with follow-up and hormone therapy was administered intermittently due to its costs. The administrative difficulties imposed by the health insurance company contributed to the intermittent medical follow-up.		She started at 11 years old. With the first manifestations of puberty, the puberty suppression begun, which was applied intermittently due to costs. However, the therapy has been constantly administered for at least 1 year, and progression of some secondary sexual characteristics (testicular growth and appearance of pubic hair) has been documented. The follow-up has been constant with the group, so it was decided to add estrogen replacement therapy.

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actual genitalia. This means that, probably, surgical affirming interventions should be individualized and directed to the needs of each individual. As has been widely described, some people may identify as predominantly "male" or "female", but with aspects of the "other" gender, which is why there is a wide terminology to define a situation where neither "male" nor "female" is suitable – "gender fluid", "pangender", "bigender", "agender", "gender neutral", or even "genderless".[5,21,22] However, all individuals in our case series were able to clearly define their gender identity as "male" or "female", therefore, more on a binary fashion, which is why we did not need to use any other terminology. We hypothesize that this binary self-appreciation may be influenced by their social perception of gender and their knowledge about it, which means we could not be sure if these gender identities could evolve or change within their gender affirmation processes, especially in the aforementioned individuals who did not clearly feel dysphoria for their genitalia.

Another topic of controversy is the best timing for hormonal intervention and definitive therapies, with the main concern being chronic secondary effects. Experts suggest a cautious attitude towards the moment of transition and that "[…] parents and caregivers should fully realize the unpredictability of their child's psychosexual outcome […]"[23]. The World Professional Association for Transgender Health (WPATH) published guidelines (2001) and The Endocrine Society Guidelines for Transgender Care both classify the interventions and the optimal ages for them, as "fully reversible" for puberty suppression therapy, "partially reversible" for cross-sex hormones at the age of 16 years old, and "irreversible" for surgical interventions at the age of 18 years old.[7] In our case series, only the fourth individual received adequately timed puberty suppression therapy with leuprolide acetate. Gonadotropin releasing hormone analogues (GnRHa) are the most frequently used for puberty suppression. There are no irreversible effects found to be associated with this medication yet,[24] except for some suggested effects on bone mineral density. Nonetheless, there is no clarity about mid- and long-term effects and about how to screen the effects of children undergoing these therapies.[9] In our group, the fourth individual, who has been receiving leuprolide for almost 2 years, has been ordered to take an annual dual-energy X-ray absorptiometry (DXA) scan, as well as the first case, who was in puberty suppression therapy previously. The other two cases are planned to undergo a DXA at 1 year from the initiation of therapy. Furthermore, regarding puberty suppression, we find important to highlight that three of our individuals were indicated to initiate puberty suppression at Tanner 4 stage. Even though the guidelines propose not to start suppression therapy in individuals >16 years old, Klaver et al. found that the age of initiation of GnRHa was $\sim 14.5 \pm 1.8$ years old.[13] Furthermore, guidelines also mention that there is a lack of evidence and that the potential irreversibility of this treatment with little adverse effects is remarkable.[8] Moreover, the Endocrine Society Guidelines argue that cross-sex hormones should not be initiated before the age of 16 years old, since there are scarce studies at ages between 13 and 14 years old, but there is controversial evidence about the best management protocol.[8,25]

It has been stated that, despite the clear guideline recommendations, the number of children and adolescents who are actually receiving the proposed treatments is lower than those who are appropriate candidates.[26] Many of these individuals are unable to access treatment mainly due to insurance difficulties, social/geographical barriers, family dynamics, the high cost of medical treatments, and lack of insurance coverage; but also due to ignorance by part of physicians about the standard of care of these individuals and, finally, the limited number of centers who are currently offering integral treatment. This ultimately ends in a high number of children and adolescents who seek support late, after reaching Tanner 3 stage, making puberty suppression less effective.[25,27] In our own experience, the same barriers previously described have been identified. The main limitation we found for our individuals is the difficulty in acquiring drug therapy due to its high costs, given that insurers do not provide the medications in this country. Also, some of them had previous intermittent and irregular evaluations by different specialists who did not refer them to a transdisciplinary group on time, finding a time frame between the FME ever and the FGE as long as 3 years, meaning that most of them had advanced puberty (but not complete) at the time of the FGE.

The Trans Youth Research Network group tried to reunite their patients in order to unify treatment. It includes 497 children and adolescents from 4 clinics in Los Angeles, Chicago, Boston, and San Francisco (United States of America), recommends the integral evaluation by endocrinology or adolescent medicine, nursing, psychiatry, psychology, and social work within the framework of a transdisciplinary group. However, the four centers all have a different psychological approach, use different types of puberty suppression medication and cross-sex hormones, have various times of initiation of treatments, as well as distinct monitoring schemes.[11]

There are still many areas of uncertainty in the management of the pediatric GD population, and there are no clear guidelines that state the best management within the framework of a transdisciplinary group. However, it is clear that the opportune attention of patients in a coordinated group can improve psychosocial outcomes.[28]

Our limitations as a study consist in the small number of cases and the short follow-up period, which results in impossibility to make statistical inferences from them. However, in our country, there is scarce information and publications regarding this topic, and the experience in the management of these patients is limited, which is why we consider of outmost importance to record our progress early in approaching these patients and to encourage other centers to create very much needed transdisciplinary groups, with the final purpose of helping these individuals overcome the described barriers.

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Conclusion

The management of GD children and adolescents is still an area of constant growth and development. Current recommendations are based in scarce information about the pediatric population. A transdisciplinary, coordinated, and early approach improves the psychosocial outcomes. It is frequent in our country to find the FME in the post-pubertal stage, in which the puberty suppression effect is limited; this is the biggest concern and challenge within our group. Social, economic, information and knowledge are the main barriers identified, and it should be the main objective of physicians to make an early identification and approach of GD children and to work in overcoming barriers to treatment.

Conflict of Interests

The authors have no conflict of interests to declare.

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