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Adolescents with gender dysphoria

Peggy T. Cohen-Kettenis, Ph.D., Professor Emeritus of Medical Psychology [a, *],
Daniel Klink, MD Ph.D., Pediatric Endocrinologst [b, 1]

[a] Department of Medical Psychology, VU University Medical Center, PO Box 7057, 1007 MB Amsterdam, The Netherlands
[b] Department of Pediatrics, VU University Medical Center, PO Box 7057, 1007 MB Amsterdam, The Netherlands

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Young people with gender dysphoria are increasingly seen by pediatric endocrinologists. Mental health child specialists assess the adolescent and give advice about psychological or medical treatment. Provided they fulfill eligibility and readiness criteria, adolescents may receive pubertal suspension, consisting of using gonadotrophin-releasing hormone analogs, later followed by cross-sex hormones (sex steroids of the experienced gender). If they fulfill additional criteria, they may have various types of gender affirming surgery. Current issues involve safety aspects. Although generally considered safe in the short-term, the long-term effects regarding bone health and cardiovascular risks are still unknown. Therefore, vigilance is warranted during and long after completion of the last gender affirming surgeries. The timing of the various treatment steps is also under debate: instead of fixed age limits, the cognitive and emotional maturation, along with the physical development, are now often considered as more relevant.

Introduction

Awareness about one's sex and gender evolves gradually in childhood. When growing up, children learn to classify their own and others' sex and they increasingly develop an understanding of the various aspects of gender. Gender identity consists of the ability to classify oneself and others as male or female but has strong affective components as well [1]. Long before children have a sophisticated

* Corresponding author. Tel.: +31 20 4440542; Fax: +31 30 4440502.
E-mail address: pt.cohen-kettenis@vumc.nl (P.T. Cohen-Kettenis).
[1] Tel.: +31 20 4441770; Fax: +31 20 4442422.

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understanding of gender, they display male-typical or female-typical gender role behavior (see [2] for an overview of typical gender development). Most children will identify with the gender they have been assigned to and show behaviors that are typical for their natal gender. However, already very early in life, some children may experience an incongruence between their experienced and assigned gender. They identify with the other gender, show behaviors and preferences, typical for the gender they were *not* assigned to at birth, and sometimes strongly dislike their physical sex characteristics. If the distress resulting from this incongruence reaches clinical levels, the diagnosis of Gender Dysphoria (GD) according to current Diagnostic and Statistical Manual of Mental Disorders, (DSM-5) of the American Psychiatric Association [3], is applicable. Children who show gender variant behavior only do not fulfill the criteria for a GD diagnosis [4].

Pediatric endocrinologists increasingly come across adolescents who pursue gender reassignment (GR) or gender affirming treatment (GAT). However, the knowledge about treatment of gender dysphoric adolescents is not widespread. In this article we give some background information on the phenomenon of Gender Dysphoria, describe current treatment options, address safety issues and current controversies.

Gender concepts

GD, gender identity and other concepts related to gender have been considered as dichotomous for a long time. People were perceived to be either male or female, or to suffer from GD (be transsexuals) or not. This binary thinking does not correspond to reports of applicants for treatment and has increasingly been criticized in the literature [5–8]. Not all individuals who experience gender incongruence necessarily experience a complete cross-gender identity, want hormone therapy as well as surgery, and want to live as the other gender permanently or completely. Some even do not need clinical attention at all [[9,10]; see [11] for an overview] Instead of male and female or transsexual, people's gender identification may cover a wide spectrum of gender identity labels, such as “third gender,” “pan-gendered,” or “gender queer.”

Prevalence

Non-specialized clinicians will only infrequently come across adolescents with GD. Yet rapidly increasing numbers of pediatric endocrinologist or other pediatricians are confronted with a request for hormone treatment. Formal epidemiological studies on GD in children and adolescents up to 15 years do not exist. Prevalence estimates of GD (transsexualism) among adolescents of 15 years or older and adults are usually based on the number of people who were treated at gender identity clinics. The numbers vary widely across studies, probably reflecting. differences in methodology, and differences between countries in treatment availability and criteria for treatment eligibility. The most recent studies report prevalences between 1: 3.000 and 1: 30.000 [12].

Even less is known about the prevalence of gender incongruence phenomena other than GD. A recent Dutch study among 8000 older adolescents and adults (15–70 years) investigating various types or gender incongruence reported that 5.7% of the natal male and 4.0% of the natal female responders did not experience themselves as clearly male of female [13]. They reported an ambivalent (equal identification with another gender as with gender assigned at birth) or incongruent (stronger identification with another gender than with gender assigned at birth) gender identity. A much smaller group (0.6 of the natal males and 0.2 of the natal females) also reported discontent with their assigned gender and/or wanted hormone treatment and/or some form of surgery.

Gender dysphoria development

Psychological, social and biological factors all influence gender development [2,14]. Most of the research in general gender development has focused on cognition and behavior. Because gender identity is more difficult to investigate, and gender variant identities are less prevalent than normative gender identities, not many studies exist on determinants of GD. Although various psychological and biopsychological theories have been proposed to explain GD, relatively little evidence has supported these theories so far. Lately, the focus of research has shifted towards histological and brain imaging