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The Transgender Spectrum: Phenomenological Subtypes and Their Possible Correlation with Neurodevelopmental Disorders and/or Trauma

Klaus Damgaard Jakobsen[1,2*], Ali Xapana[2], Sarah Washbrook[2], Kirsten Callesen[3], Thomas Mears Werge[2]

[1]Private Psychiatric Practice, Jernbanegade 16, 1.-8, DK-3480 Fredensborg, Denmark

[2]Research Institute of Biological Psychiatry, Mental Health Centre St. Hans, Mental Health Services of the Capital Region of Copenhagen, Boserupvej 2, DK-4000 Roskilde, Denmark

[3]Psychological Resource Centre, Raadhusstraede 6, DK-1466 Copenhagen, Denmark

***Corresponding author**: Klaus Damgaard Jakobsen, Private Psychiatric Practice, Jernbanegade 16, 1.-8, DK-3480 Fredensborg and Research Institute of Biological Psychiatry, Mental Health Centre St. Hans, Mental Health Services of the Capital Region of Copenhagen, Boserupvej 2, DK-4000 Roskilde, Denmark

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Abstract

Introduction: Transgender (TG) people have existed in all cultures throughout history, but it is not until recently due to gender-affirming hormone therapy and surgery that these individuals have been able to express their genders physically. This case study aims to define and characterize possible dimensions in the TG-spectrum and possible correlates of these. **Methods:** 12 patients with TG who agreed to participate in these case studies by informed consent. Extractions of clinical assessment and psychometric evaluation were used to generate condensed vignettes that are illustrative and describes both the diagnostic and the clinical heterogeneity among psychiatric outpatients on the TG-spectrum consulting psychiatric practice. **Results:** Evaluation of 12 patients with TG in psychiatric practice for reasons other than TG has made it possible to identify 4 apparent presentations: TG-binary, TG-non-binary, non-TG-non-binary, and apparent-TG. Furthermore, having an early awareness of being TG, a birth assigned gender (BAG) as female and a severely traumatized background may be an indicator of TG-binary and TG-non-binary status while; having a BAG as male without a traumatic background seems more frequent among non-TG-non-nonbinary. TG subjects affected by ADHD without traumatic upbringing may express post transition heterosexuality, while individuals recognized with ASD independent of a traumatic upbringing may express asexuality pre-transitioning and/or homo/pansexually post-transitioning. **Conclusion:** These clusters of clinical features and TG subtypes have not been proposed before, but their importance to medical care of TG patients is obvious though they require replication among larger numbers of TG individuals and across national settings and cultural backgrounds.

Keywords: Transgender-Spectrum; Transgender-Binary; Transgender-Non-Binary; Non-Transgender-Non-Binary; Apparent-Transgender; Neurodevelopmental Disorders.

Introduction

Transgenderism (TG), defined in ICD-10 and DSM-V classifications as not identifying with one's birth-assigned-gender (BAG) to a degree that it causes gender dysphoria (GD) with a reported prevalence within the US population between 0,6-1,7% [1], is currently a topic of debate among policy makers, social workers, psychological counsellors, and health care professionals, i.e., (well beyond the LGBTQIA+ community itself) [2]. Despite growing societal awareness, medical understandings of TG have remained limited [3]. Particularly, stakeholders fail to assimilate the large heterogeneity in clinical presentation of TG individuals and likely a corresponding diversity in unmet need of support and healthcare provision. Diversity of clinical relevance may include classical epidemiological parameters such as age-of-awareness of TG, temporal stability of TG presentations, familial background, and social support, as well as auxiliary psychiatric or somatic illnesses. In fact, a very recent population-based study by Ali et al., 2023, leveraging Danish healthcare registers provided convincing evidence of substantially increased hazard ratios for all major psychiatric disorders among TG people (personal communication). A particular important and largely unrecognized clinical challenge of transgenderism arises from the binary clinical classifications. While the gender identification of some TG people align well with a binary gender concept consistent with switching of physical gender to the opposite of the BAG, others in turn, identify as nonbinary or genderfluid and express their gender as neutral, blended, or mixed [4]. Some of these TG people may have gender reassigning treatment, while others do not. Importantly, these differences among TG people collide with the dichotomous nature of the diagnostic classifications with consequences for current assessment and treatment regimens conceived and developed within the binary classification systems. An illustrative example of the clinical consequences of the categorical classification systems is that of nonbinary BAG women, in some parts of Denmark but not others cannot have their breasts removed except following prior Testosterone treatment for 9 months; a treatment who some find inappropriate due to the undesired masculinization and virilization that follows from hormonal treatment. This unevenness, the limited knowledge, and the appreciation of TG heterogeneity in the treatment programs of TG even in the present classifications, notably the recently released ICD-11 classification that has de-pathologized GD and uses the milder and less categorial term, gender incongruence (GI) fail to describe the nonbinary TG, (see table 1). The contrast between the categorical, clinical classification and the dimensional self-perception of TG may therefore hamper the communication with the clinician and compromise the ability to accurately understand, recognize, and evaluate signs or symptoms, and to decide on treatment while acknowledging cross-cultural differences and individual wishes. In this study we present thorough clinical characterizations of 12 TG spectrum people seeking clinical evaluation and support in a single psychiatric practice to unfold unappreciated clinical characteristics that can be seen as conflicting with the present classifications on TG.

Patients/Materials and Methods

Background and clinical procedures

In Denmark, TG is no longer considered a psychiatric illness, but a somatic condition, according to the Danish Health Authority (Sundhedsstyrelsen (SST)) (https://www.sst.dk/da/Viden/Koensidentitet/Koensidentitetsforhold).

Therefore, people in Denmark with TG are referred by clinicians for evaluation and treatment at local Centres for Gender Identity (CGI) (Center for Koensidentitet), which form part of the country's university gynaecological departments. At these centres for gender change (GC), both gender-affirming hormone therapy (GAHT) and gender-affirming surgery (GAS) are offered, in collaboration with departments of endocrinology, growth & reproduction, otolaryngology, plastic surgery and clinical sexology.

Diagnostic classification / year	Categories / codes	Description / diagnoses
ICD-10 (1992 – 2016)	F64.0 F64.1 F64.2 F64.8 F64.9	Transsexualism Dual role, transvestic Gender disorder of childhood Other gender identity disorders Gender identity disorder, UNS[3]
ICD-11 (2018)	17 HA60 HA61 HA6Z	Gender incongruence Gender incongruence of adolescence & adulthood Gender incongruence of childhood Gender incongruence, UNS[3]
DSM-III (1980)	Transsexualism (302.5x) Gender Identity Disorder of Childhood (GIDC) (302.60) Atypical GID (302.85)	Transsexualism Child Adolescent & adult Non-transexual type NOS[4]
DSM-III-R (1987)	Transsexualism (302.50) Gender Identity Disorder of Childhood (GIDC) (302.60) Gender Identity Disorder of adolescence and adulthood (GIDAANT) (302.85) Gender Identity Disorder not otherwise specified (GIDNOS) (302.85)	Transsexualism Child Adolescent & adult Non-transexual type NOS[4]
DSM-IV (1994) / DSM-IV-TR (2000)	Gender Identity Disorder of adolescence and adulthood (GIDAANT) (302.85) Childhood (GIDC) (302.6) Gender Identity Disorder not otherwise specified (GIDNOS) (302.6)	Gender identity disorders in children Gender identity disorders in adolescents and adults Gender identity disorders, NOS[4]
DSM-V (2013)	Gender dysphoria (GD) (302.6) (302.85) (302.6) (302.6)	Gender dysphoria Gender dysphoria in children Gender dysphoria in adolescents and adults Other specified gender dysphoria Unspecified gender dysphoria
1. ICD, International Classification of Diseases, versions, 10 & 11; 2. DSM, Diagnostic and Statistical Manual, versions, III – V; 3. UNS = unspecified; 4. NOS = not otherwise specified.		

Table 1: Classification of transsexualism, gender incongruence and gender dysphoria according to the diagnostic classifications of ICD of WHO[1] and of DSM[2] of USA.

Diagnoses and Psychometrics

Clinical diagnoses have been assessed according to the WHO, International Classification of Diseases (ICD), 10th Revision, research version, as neither the ICD-11 nor the Diagnostic and Statistical Manual of Mental Disorders (DSM), Fifth Edition have been implemented in Denmark. Psychometrics used for evaluation were the Diagnostic Interview for ADHD in Adults 2.0 (DIVA) [5], the Ritvo Autism Asperger Diagnostic Scale (RAADS) [6] and the Systemizer Profile Questionnaire (SPQ)/systemizer.dk, which is a condensed computerized version of Simon Baron-Cohens (SBC) original Autism Spectrum- (AQ), Empathy- (EQ), Sensory and Social Sensitivity- (SSQ), and Systemizing Quotients (SQ) (7), as well as items selected from the Sensory, Social, and Highly Sensitive Checklists [15-17]. AQ, EQ, SSQ and SQ are internationally recognized, most recently in the form of SBC's large cohort study (>600,000 people) on the link between autism and TG [8-14]. SPQ autogenerates a differentiated test response with description of autism features, empathy, sensory and social sensitivity, and information processing skills based on 85 questions with a possible maximum score of 170 points.

Sampling and Participants

Case stories have been sampled at Psykiatrisk Klinik Fredensborg by the first author.

Ethics and Allowances

All contributors have given written informed consent to anonymous publication of their detailed medical histories for the benefit of others and educational purposes. The study has been approved by and is supported by the Danish Regions (Danske Regioner), which is the Danish equivalent of the UK National Health Service, as part of a quality assurance survey on clinical ADD/ADHD and/or ASD investigation among Danish psychiatrists in private practice. Permission from the Danish scientific ethical committee system to publish these clinical cases in an anonymous form is not required because the data are not biological nor experimental. The study has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Results

Sample Descriptions

We have chosen to present 12 clinical vignettes to illustrate both the complexity of this topic and the proposed subdivision of TG phenotypes into a TG spectrum:

Binary transgenderism (individuals with GD/GI with the wish to transition to the opposite gender of their BAG)

Case 1:

A 33-year-old Female-to-Male (FtM) TG person was referred for evaluation. His mother may have Attention-Deficit-Hyperactivity-Disorder (ADHD). He was enrolled in the Child and Adolescent Psychiatry Program (CAP), for 4 years, where he was diagnosed and treated for major depression (MD), schizophrenia (Schiz), bipolar disorder (BP) and emotionally unstable personality disorder (EUP) according to ICD-10. He has no history of alcohol, drug, or tobacco abuse. He receives early retirement pension from the state and lives alone with a dog. He describes his mother as hard and dominating. He was bullied at school, where he spent time daydreaming. He says that it has always been difficult for him to read, he never did his homework, and he used classes at school for drawing. He has no formal education. He says that his memory function is medium, but that his ability to concentrate and keep a focus is bad. He says that his possessions are always disappearing. He says that he can read other people's facial expressions and that he talks a lot in groups, usually too much about himself. He was sexually assaulted by a teacher as a child who displayed his erect penis to him and he was raped, vaginally, as 16-year-old. He suffers from- bulimia, binge-eating-disorder (BED), being severely overweight, impulsive shopping and addiction to computer games. He has tried to commit suicide 10 times. At 16-17 years old, he prostituted himself as a female. He says that he has been aware of being TG since 11-years of age. At the time of first contact, he had been in GAHT treatment with Testosterone decanoate (Nebido®) 4000 mg every 3 months for 12 months and was happy about that. He has legally had GC. Despite, the GAHT, he still menstruates. He wants all his female genitals removed because he does not want children. He has previously had girlfriends, but he now considers himself to be pansexual, mostly androphilic, (i.e., transgay). He is awaiting a mastectomy, but must wait until his weight, which was 160 kg and currently is 117 kg, has gone down. He wants a complete GC with a neophallus if possible as he has sexual fantasies about penetrating others, including men. DIVA 2.0 confirms ADHD, while RAADS and SPQ do not confirm an autism-spectrum-disorder (ASD). He starts treatment with Methylphenidate (MPH) 10 mg x 3 daily, with a good response as his cognition improves and he becomes calmer. He is switched to MPH depot (Concerta®) gradually increased to 92 mg daily to which he responds well. His transition progresses, he grows a beard and his bodily proportions become more masculine with a larger muscle mass due to exercise. He develops Hashimoto's Thyroiditis, starts gaining weight again (20 kg), develops lethargy, lower back pain and his memory function deteriorates.

Case 2:

A 27-years-old FtM TG person was referred for evaluation. He says that he has two brothers with ASD. He says that he was previously a girl, but that he had his breasts removed at a private plastic surgical clinic when he was 15 years old and that he has since been treated with GAHT/Nebido® 3000 mg, every

3rd month, which prevents menstruation. Daily, he wears a combined penile and scrotal prosthesis (i.e., a Packer (see Figure 1)) to avoid people looking at his crotch. He is physically tall, slim with a hairy body, having a thick beard, and a deep voice. His attitude is outwardly masculine. He is satisfied with his transition and currently has no wish for lower GAS/a neophallus, due to considerations regarding surgical outcome and adverse effects. He is post transition heterosexual and married to a ciswoman with whom he describes having an active sex life on his initiative. He is presently a graduate student at a Danish university, where he is doing well. Due to a poor concentration, lack of attention, a bad memory and racing thoughts he is examined for ADHD, which is confirmed by DIVA 2.0. He starts MPH 10 mg x 3, gradually increased to 15 mg x 4, daily with a good response as it improves his cognitive and executive functions and his university grades.

Figure 1: Flaccid (silicone) penis and scrotal prosthesis, i.e., Packers, size small – extra-large, different colours, shapes, circumcised and uncircumcised.

Case 3:

A 19-year-old FtM, TG person was referred for evaluation. He says that his brother has ADHD, his mother has ADHD, anxiety and MD and his uncle has Schiz. He has been diagnosed by the CAP with ASD and he is awaiting GAHT to start GC. He has had one previous episode of MD. He is living at home with his parents. He dropped out of school due to constant daydreaming. As a child he had obsessive-compulsive-disorder (OCD). His memory function is bad, he has no focus, always forgets where his belongings are placed, and he is messy. He is unable to read other people's facial expressions, remains silent in groups of people, has difficulties with even simple small talk and is unable to feel other people's emotions. He is constantly daydreaming about Lego Ninjago. He is perceptually disturbed by light, sound, noise, smells, and itching clothing. He shops impulsively. He is still a virgin and has no interest in sex. He knew at 11-years of age that he is a transman. He has always felt male and would like to have both upper and lower GC. However, he has accepted having only GAHT and upper CG with breast removal as he is uncomfortable with his feminine-looking upper body but can accept living with female genitals due to considerations regarding surgical outcome and adverse effects. DIVA 2.0 confirms ADHD. He starts MPH 10 mg x 3, which provokes anxiety, and he is therefore switched to Dexamphetamine (Attentin®) 5 mg x 3. He has recently finished his 36 months observation at the CGI and is currently awaiting permission to have his breasts removed and start GAHT, which they finally refused due to considerations about psychic instability. He has now been referred to another CKI in the country, where he hopes to be accepted for GAHT and mastectomy.

Case 4:

A 26-year-old FtM, TG person, was referred for evaluation. His mother has depression and Post-Traumatic-Stress-Disorder (PTSD) and his sister has health related anxieties. He has always been introverted, a loner with few friends, and has a special interest in ice-skating, practicing the sport on an elite level. He has had GD since 13-years-old, has attended the local CGI, and has had GAHT and a mastectomy, but has decided not to undergo lower surgery because of the possible risks in relation to his sport. He lives alone, has a bachelor's degree in science, and wants to become a graduate student at the local university. He says that he was always daydreaming at school and that he still has problems maintaining focus when attending lectures at university. He has had several depressive episodes previously and is diagnosed with a moderate relapse. He has OCD with severe- checking behaviour regarding appointments and doors, which he cannot touch, especially doorhandles, afterwards he must always wash his hands, and he constantly corrects the position of things at home and in stores. He is unable to read other people's facial expressions, he functions poorly in groups, and he is perceptually disturbed by light, sound, smells, and soft items. He was bullied at school and locked up at his day care. He has previously self-harmed by cutting himself. He had bulimia and anorexia from 9-23-years of age. He is still a virgin, not sexually attracted to any gender and does not masturbate. He starts antidepressant therapy with Sertraline 50 mg, later increased to 100 mg and Mirtazapine 15 mg and his depressive- and OCD symptoms fades away gradually. RAADS = 191 and SPQ = 134 confirms ASD. DIVA 2.0 confirms ADHD. He starts MPH 10 mg x 3 with a good response on his executive functioning, he attends his classes at university and is now able to follow his graduate educational program. He is shifted to MPH depot (Concerta®) 54 mg and is doing well on that.

Non-binary transgenderism (individuals with GD/GI with wish for partial transition to the opposite gender of their BAG)

Case 5:

A 33-year-old Male-to-Female (MtF) TG person was referred for evaluation. Her mother and sister suffer from EUP. She says that she was raised in a religious sect, which she has left. She says that she has always been a loner, isolated, severely bullied and with poor social skills. She was enrolled in and diagnosed by the CAP as suffering from Schizotypy at 10 years old. She identifies as a translesbian, never having been able to adapt to being a man with a male body, although she accepts her penis. She expresses hatred towards men maybe due to having had a harsh father. She says that she had temper tantrums as a child and that she was placed in a foster-care-home from 11 – 18 years old. She is awaiting GAHT, and she wants upper GC, i.e., breasts. But she has no desire for lower transition as she fears the complications to feminizing surgery and likes her penis, which she describes as being large. Later she starts GAHT with Estradiol (Estrogel®) 0,6 mg/mg x 3 doses daily and antiandrogen treatment with Cyproterone Acetate (CA) (Androcur®) at the local CGI. She has dyslexia, and no formal education due to the inability to concentrate. She has problems reading other people's facial expressions, does not function in groups of people, and has difficulties feeling other people's emotions, but describes having empathy and being very sensitive. She explains that she has always had difficulties learning and concentrating because of daydreaming and zooming out. DIVA 2.0 confirms ADHD, and she starts MPH 10 mg x 3 daily with a good response and she is switched to MPH depot (Ritalin Uno®) 40 mg daily, likewise with a good response. RAADS = 86 and SPQ = 77 tests confirm ASD.

Case 6:

A 23-year-old BAG male was referred for evaluation. He says that he was bullied as a child at school. He was evaluated by the CAP using play-therapy, and found to be somewhat peculiar, but within the normal range. He lives at home with his family and is in his first year at engineering school. He suffers from general anxiety, social phobia, and panic attacks. He has been chronically depressive for several years and has OCD with checking and washing behaviour in relation to fear of contamination at public washrooms. He can sometimes react with paranoid ideation, and he suffers from temper tantrums. He does not have dyslexia, successfully passed through primary school in the Americas and later attended an international high school. He admits that it is difficult for him to study due to lack of focus. He says that his memory function is medium and that his attention is dependent on context. There are some days when he completely lacks focus. He has difficulties reading the facial expressions of other people and avoids eye contact. He is unable to be in groups of strangers as he senses other people's emotions far too much, which stresses him because he does not know how to process emotional information. He has racing thoughts that impede his sleep and is hypersensitive towards light and sound and cannot tolerate wool directly on his skin. He is very picky about his food and does not eat vegetables. He shops a lot and plays computer games 6 hours daily. DIVA 2.0 confirms ADHD and RAADS = 178 and SPQ = 107 tests confirm ASD. He does not want treatment for his ADHD nor his chronic sadness. He is still a virgin. He initially confirms that he is gender congruent and satisfied with his body as a cisgendered male when leaving the clinic. He later returns to the clinic saying that he has given up becoming an engineer and that he wants to become a computer game programmer, which is his only interest. He suddenly declares that she is a transwoman, and that she wants GAHT to have breasts and GC. She has no knowledge of her sexual orientation and is unable to relate to the fact that she has a penis. She is referred to the local CGI for GC therapy as wished.

Case 7:

A 22-year-old MtF TG person was referred for evaluation. Her uncle had Schiz, her great grandmother had BP and her brother has ADHD and ASD. She has previously been evaluated by the CAP with anxiety, MD, ADD and ASD. She says that she has always been very introverted, currently lives at home, has no occupation or friends, and is supported by her parents. She says that she dropped out of the last 2 years of school, due to severe harassment and bullying from her school mates. She says that she seldom did her homework, although she is not dyslexic, and spent school lessons daydreaming. She is unable- to read other people's facial expressions, function in groups of people or to small talk. She has attended the local CGI for 3 years and is transitioning. However, her treatment with CA and Estrogens is currently paused, respectively because- she only wants breasts, and she intends to freeze a sample of her own semen in case she wants children in the future. She wants her Adams apple modified in a more feminine way but has no wish for lower surgery because she does not want any irreversible major surgical procedures in case, she later wants to detransition and become male again. She says that she only wants to take GAHT to have breasts, but she will not continue once she has them. She is still a virgin. She starts Sertraline 50 mg, daily, for anxiety and MD, but complains about retarded ejaculation and is therefore shifted to Duloxetine 60 mg daily, which due to a suboptimal response is increased to 120 mg, daily with a good response.

Case 8:

A 20-year-old BAG female was referred for evaluation. She was bullied in school. She has previously been evaluated by the CAP with ASD. She has also been evaluated by the local CGI because she wishes to have her breasts removed, which was denied because she did not want GAHT and only wished to have a flat chest. She lives at home and attends a special educational program for youth with functional problems. Her primary interest is Japan,

which she has visited 4 times. She has changed her name to a gender-neutral Japanese name and would like to emigrate to Japan as she thinks she would blend in better there. She has problems with attention, concentration, memory function, executive functioning, and reading other people's facial expressions. She is unable to function in groups of people because she cannot sense other people's emotions. She is a virgin and regards herself as being boyish, tending towards male, in between the 2 binary genders, but not female. She considers herself a sort of male and she would like to become a transgay Japanese person. She wears a Binder (see Figure 2) to hide her breasts but accepts her menses and would like to give birth to her own children, but not to breastfeed them. She wants her breasts removed and may consider GAHT but is not sure about it and does not want male genitals. During her sessions at this clinic, she successfully has her breasts surgically removed abroad, without adverse effects, because this is illegal in Denmark without having GAHT first. He is pleased with the result and happy to have a flat chest without having to wear a Binder. He decides to have her legal status in Denmark changed to male but has no wish for GAHT. Due to depression, he starts Vortioxetine (Brintellix®) 10 mg, increased to 20 mg, with good effect. His depression is well treated and in remission. RAADS = 162 and SPQ = 85 reconfirms ASD. DIVA confirms ADD, but he does not want that treated.

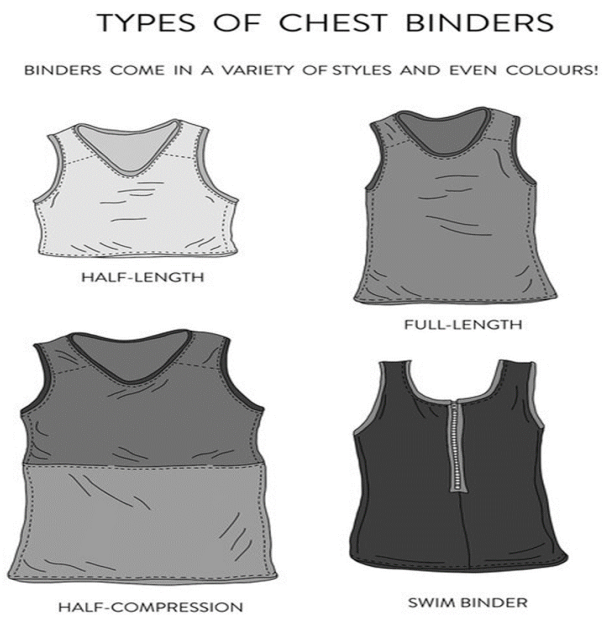

Figure 2: Illustration of different types of breast/chest compression, i.e., Binders, for various use.

Non-binary-non-transgenderism (individuals with previous or no GD/GI with a wish to express none, one or several genders other than their BAG (truly gender fluid people))

Case 9:

A 24-year-old FtM TG person was referred for evaluation. He has always been a loner. His mother and grandparents on his mother's side suffer from depression, his sister suffers from auditory hallucinations and a male cousin has ASD. He has previously been evaluated by the CAP and diagnosed with ASD. The CAP referred him to the local CGI as he wishes to have GC. At the time of referral, he lived at home and attended a school for adolescents with ASD. Later he continued to high school. At the time of starting at this clinic, he had been suffering from moderate depression and social anxiety for 2 years, which was effectively treated with Citalopram 30 mg. He suffers from cognitive- and social cognitive problems, is unable- to read other people's facial expressions, to function in groups, or to feel other peoples' emotions, so he always prefers solo activities. He has had an emotional relationship with a girl, though still a virgin and says that he has always felt like a boy. He does not want to menstruate. He starts GAHT with Testosterone at the local CGI and develops a deeper voice and male body hair, he grows a beard and stops menstruating. He is signed up to have his breasts surgically removed, but when he receives the operation date, his depression deteriorates significantly, so the process of GC is paused. He starts Duloxetine 120 mg, which is increased to 180 mg in combination with Mirtazapine 15 mg due to insomnia. This brings the depression into remission once again. Post-depression he decides to detransition, he stops the GAHT, starts local vaginal Estrogenic therapy, and have lawful GC again, taking back her original female name and social security number. She gives up her academic education and instead starts at a workshop, training to become a carpenter. Because of the previous GAHT, she has male body and fat proportions and a deep voice. She wears her hair short, and her manners and behaviour are those of a young male. Objectively, her gender-identity is effectively gender fluid (GF).

Case 10:

A 20-year-old BAG male was referred for evaluation. His aunt suffers from anxiety. He says that he has always been introverted, friendships have always been on a one-to-one basis, never in groups and his primary interest is videogames. He lives at home, has some friends, but no girlfriend and attends high school. He says that he spent primary school daydreaming, his attention and concentration is poor, and he forgets everything. He claims he can read other people's facial expressions, but he finds it impossible to small talk and does not know how to react to strangers. He lost his virginity as 16-years-old during a 6-month relationship with a ciswoman. He says that although he was born as a male with male genitals, he identifies as gender neutral (GN), not as TG as he does not have GD/GI, and has no wish for GAHT, surgery or to legally transition. If it were possible in Denmark, he says that he would legally identify as a 3rd gender person. He is pansexual, regarding gender and sexual attraction of no interest. He uses 2 first names, a

male and a female one, preferring the female one. DIVA confirms ADHD and RAADS = 118 & SPQ = 81 confirms ASD. Effectively being GF.

Case 11:

A 21-year-old BAG male was referred for evaluation. He has an aunt with EUP and OCD. He had a temper as a child, but not any longer. He has always been happy, but quiet and with few friends. He currently lives at a college where he studies artificial intelligence. He has some friends and contact with his family. He suffers from social anxiety, he must always check that he has remembered to lock the front door, often returning after having left home, and he constantly must recheck train timetables and other information. His cognitive functions are good, he has good attention, concentration, and memory function. He can hyperfocus on subjects of interest, and regularly attends his course of study. He is unable to read other people's facial expressions, is very silent in groups of strangers, and does not like to small talk, although he is able to do it. He can sense other people's emotions, but he finds it overwhelming, and so withdraws. He is hypersensitive to light. He is careful with money, worked before studying and saved up. He plays computer games 4-6 hours daily. He lost his virginity as a 17-year-old and has had a relationship with a ciswoman for 2 years. He says that he does not have GD/GI and that he is non-binary. Although he does not like his body hair, he likes his beard. He wears female attire, eyeliner, and jewellery and has long hair, which he wears up in a modern female style. He is considering having GAHT and breasts but does not find this urgent or a necessary issue. He has no problems accepting his male genitals. He says that he is pansexual. Given the opportunity, he would change his legal gender to neutral or 3rd gender, though he would keep his name. He wants to be examined for ASD. RAADS = 178 and SPQ = 126 tests confirm this. Effectively being GF.

Apparent transgenderism

Case 12:

A 23-year-old BAG female was referred for evaluation. MD runs in her family. Both her father and stepfather have been violent. At the time of referral, she was in consultation at the local CGI, and she has had a girlfriend. She has dyslexia and difficulties with attention and concentration. She can read other people's facial expressions, can function in groups of people, although not well, and is able to feel other people's emotions. She was sexually abused by a male friend, with whom she identified, being transmasculine herself for several years, who raped her several times over a period of 4-5 years. She initially wants GAHT and wears a Binder. She has always seen herself as a boy-girl. She perceives her body as strange, wants to have mastectomy and to stop menstruating. Initially she describes her transmasculinity as existing before she was raped. Because of MD she starts Duloxetine 60 mg, later increased to 180 mg, Mirtazapine 15 mg, later increased to 45 mg and Lamotrigen gradually increased to 300 mg, daily. Due to living in a small community, she accidently meets her rapist at an event, and develops symptoms congruent with PTSD. She is hypervigilant, has nightmares about the rapes, autonomous instability and flashbacks and she starts seeing a psychologist specialising in PTSD. RAADS = 39 and SPQ = 69 does not confirm ASD. She starts to self-harm by cutting herself. As her rapist still lives in the same area as her, her PTSD, is triggered regularly by the thought of meeting him in the streets. She is referred to another CGI because the first one stopped the program due to her PTSD. She develops persecutory delusions and is started on Risperidone 1 mg, daily. She deteriorates further and develops racing thoughts, audible thoughts, and auditory hallucinations and is referred to the local psychiatric service for young patients with psychoses (OPUS). Due to the onset of psychosis, the second CGI stops any further steps towards gender transition. She returns to this clinic after having been through both PTSD and psychosis treatment at local public psychiatric services, successfully and is only being treated with Pregabalin 150 mg, daily for anxiety. She has now accepted that she is female, although she wishes that she was a boy. She is dating another girl. She continues to attend this clinic, and is treated solely with Pregabalin 150 mg. She has no depressive or psychotic symptoms. She lives permanently at her father's house, as she did before her psychotic breakdown, and receives a public allowance for living expenses. She starts to dress more colourfully and in a more feminine way, has her hair cut in a stylish fashion and starts using makeup, to blend in among other people instead of looking boyish. She recognizes that having been raped by her former best friend, with whom she identified, has triggered an intense wish not to be weak, (i.e., female). She understands intellectually that her wish to become a man is a defence mechanism caused by the rape trauma that haunts her and trigger the desire to get rid of her female body and become a man. Both the wish to transition and her sexual orientation may theoretically be interpretated as a reaction formation/Stockholm syndrome to having been raped by her former best friend, whom she trusted.

As summarized in table 2, there are 7 BAG female and 5 BAG male in the case studies presented here. The cases of TG (11) present a wide range of sexual orientation: Heterosexual (1), translesbian (1), transgay (1), pansexual (2). Of those who are still virgins 2 are asexual, 1 is transgay, 1 translesbian and 1 unknown. Of the 11 TG cases, there are 4 cases of TG-binary, where individuals with GD/GI, wish to transition to the opposite of their BAG, 3 cases of TG-non-binary, where individuals with GD/GI wish for partial transition, and 3 cases of non-binary-non-TG,

where individuals, who identify as a GF/GN/third gender, do not wish to transition. The cases in the sample also present several psychiatric co-morbidities. All the TG and non-binary in the sample (11), presented with ADHD (2), ASD (2) or a combination of both ASD and ADHD or ADD (7). There were also 4 cases with MD and 3 with social anxiety, 1 with OCD, 1 with BED and bulimia. All had previous psychiatric diagnoses, including disorders that were not diagnosed/treated at the clinic, such as BP, EUP and Schiz. The apparent TG case was the only one without ASD, ADHD or a combination of ASD and ADHD and the only case of PTSD among the sample. Seven cases regardless of BAG have had severely traumatized backgrounds being bullied, harassed, having had harsh or violent parents and/or stepparents and/or having been sexually abused.

Case #	BAG[1]	Aware-ness of transgen-der[2]	Sexual orientation post transi-tion	ICD-10 Diag-noses	Disease specific symptoms	Disease unspecif-ic symp-toms	Previous psychi-atric history, ICD-10 diagnoses	Family history of psychiatry, ICD-10 diagnoses	Educational and socioec-onomic back ground	Trauma
1.	Female	Male from 11-years-old Wants neo-phalus	Transgay[14]	ADHD[3] BED[6] BN[7]	Daydreaming Poor concentration Bad at focusing Bad memory Impulsive overeating Impulsive shopping Impulsive computer gaming Chronic restlessness Overweight	Thoughts racing Almost illiterate 10 suicide attempts Hashi-moto's Thyroid-itis	BP[8] EUP[9] MD[11] Schiz[12]	ADHD	No education Public welfare Lives alone	Mother been physi-cally rough Bullied at school Sexually assaulted as child Raped as teenager
2.	Female	Male from 15-years-old Use of penisprothe-sis, on daily basis	Heterosexual	ADHD	Lack of attention Poor concentration Bad memory Distracted in groups of people Impulsive shopping Forgetful, always lose personal belongings	Thoughts racing		ASD[5]	Graduate student Educational grants and work Married	None

3.	Female	Male from 12-years-old	Virgin Asexual	ADHD ASD[4]	Daydreaming Forgetful Bad memory Impulsive shopping Silent in groups Unable to- read facial expressions, small talk or feel emotions of others Perceptually disturbed	Thoughts racing Very messy	ASD MD OCD[12]	ADHD Anxiety MD Schiz[13]	Dropped out of school Public allowance Living with parents	None
4.	Female	Male from 13-years-old	Virgin asexual No libido	ADHD ASD MD OCD	Daydreaming Zooming out Introvert, loner Unable to read facial expressions No function in groups Perceptually disturbed Special interest Can't touch doorhandles Excessive handwashing Excessive checking of doors	Cutting himself	AN[4] BN[5]	MD PTSD	Graduate student Educational grants Lives alone	Locked up in daycare Bullied at school
5.	Male	Always, never liked having a male body, though accepts having a penis	Translesbian[15]	ADHD ASD	Tember tantrums as child Daydreaming Zooming out Bad concentration Isolated, being a loner Poor social competences Difficulties reading facial expressions of others Do not function in groups of people	Dyslexia	Schizotypy Social anxiety	EUP[7]	No education Public welfare Lives alone	Beaten as a child Severely bullied Harsh father Foster care from 11-18-years of age Raised in a religious sect

6.	Male	Female from 23-years-of-age	Virgin unknown	ADHD ASD GA[10] MD OCD Social phobia Panic attacks	Bad memory Attention difficulties Problems focusing Peculiar as child Difficulties reading people's faces Avoids eye contact Can't process emotional information Perceptual difficulties Sadness Anxiety Checking and washing behaviours Contamination fear	Temper tantrums Thoughts raising Paranoid ideation		BP	Drops out of engineering school Educational grants Lives at home	Bullied as child
7.	Male	Feminine / nonbinary	Virgin unknown	ADHD ASD	Seldom done homework Daydreaming Very introvert Unable to read facial expressions of others Unable to function in groups Unable to small talk	Inner auditory thoughts	ADHD Anxiety ASD MD	ADHD ASD BP Schiz	School-avoid-ance for 2 years No income, supported by parents Living at home	Severely bullied and harassed by classmates
8.	Female	Boyish/ male/ non-binary from teen-age	Virgin Transgay	ADD[3] ASD MD	Bad- attention, concentration, memory, executive functioning, unable- to read facial expressions, function in groups or sense other people's emotions, special interest	No thoughts	ASD		Attends special school Public allow-ance Lives at home	Bullied in school

9.	Female	Initial transition to male and later detransition to female again Functionally non-binary	Virgin Lesbian	ASD MD Social anxiety	Unable- to read other people's facial expressions, function in groups and feel emotions of others. Having cognitive and executive problems Anxiety, sadness, stress and finally a breakdown	One suicide attempt	ASD	ASD Hallucinosis MD	Attends ASD school, drops out of high school Starts as apprentice as a parttime wood-worker earning money Lives at home, moves out, lives with roomies	None
10.	Male	Gender neutral / nonbinary identifies as 3rd gender person	Pansexual	ADHD ASD	Spent primary school daydreaming, always loosing focus, forgetting everything. Introverted, always one-to-one contacts, primary interest is videogames. Unable to small talk or to react to strangers			Anxiety	Attends high school Educational grants Lives at home	None
11.	Male	Non-binary, identifies as 3rd gender person	Pansexual	ASD Social anxiety	Unable- to read others facial expressions, small talk, being silent in groups, being perceptually disturbed by light, playing computer games 5 hours daily	Good cognitive functions		EUP OCD	Studies artificial intelligence Lives of his savings from previous work Lives in a college	None

12.	Female	Previously transmas-culine / boy-girl, Stock-holm syndrome	Lesbian	Anxi-ety PTSD	Anxiety Rape flash backs, night-mares, hyper-vigilance and autonomous instability	One suicide attempt Dyslexia Problems with attention and con-centration Perceives her body as strange Self-de-structive, starts cutting herself Perceptu-al distur-bances Perse-cutory delusions Thoughts racing, Inner audible thoughts Auditory hallucina-tions	MD PTSD Schiz		Public welfare Lives at home	Violent father Violent stepfather Rape as sexual debut by trusted friend, who continued to rape her several times during a period of 4-5 years
1. BAG = birth assigned gender, 2. Transgender = gender expression after transition, 3. ADD/ADHD = Attention-Deficit-Hyperactivity-Disorder, 4. AN = Anorexia nervosa, 5. ASD = Autism-Spectrum-Disorder, 6. BED = Binge Eating Disorder, 7. BN = Bulimia Nervosa, 8. BP = Bipolar Disorder, 9. EUP = Emotionally-Unstable-Personality-Disorder, 10. GA = Generalized Anxiety Disorder, 11. MD = Major Depression, 12. OCD = Obsessive-Compulsive-Dis-order, 13. Schiz = Schizophrenia, 14. Transgay = being attracted to males as a FtM = transman and 15. Translesbian = being attracted to females as a MtF = transwoman.										

Table 2: Showing case narratives systemized according to birth-assigned-gender, awareness of transgender, sexual orientation post transitioning, ICD-10 diagnoses, diagnoses specific symptoms, diagnoses unspecific symptoms, previous psychiatric history, family history of psychiatry, educational and socioeconomic background, and trauma.

Discussion

TG is neither a new concept nor phenomenon, although the number of people seeking medical treatment has increased in recent years. TG was not psychopathologised before the advent of modern Western medicine, and while it became so with the development of modern psychiatry in the previous century, it is no longer defined as a psychiatric diagnosis in Denmark, although it is still listed in the diagnostic manuals of ICD-10 & 11 and DSM-5. In Denmark TG is now considered a somatic condition, defined as static and binary (either/or) conditions and treatable at the local CKI, at university hospital departments of gynaecology. The presented case stories support two clinically important conclusions: First, some TG people do not identify with the simple cisgender paradigm based on genitals and physical secondary gender characteristics; and second, this subset of TG individuals may still be classified according to the nature and extent of the desired or preferred type of gender transition. In fact, the case reports suggest it is possible to accommodate TG individuals into four apparently homogeneous groups based on the degree of GD/GI deduced from analyses of unstructured conversations in a clinical setting between the TG persons and an experienced psychiatrist. One possible group encapsules 'classic' binary or reverse cisgender presentations as defined in the diagnostic classifications. This classic TG presentation may be seen as contrasting to a second, TG-nonbinary group in which the wish for physical gender expression may be highly individual and non-conformist consistent with the term non-binary. A likely third group, non-TG and non-binary, has not been clearly articulated in medical or popular litterateur and embraces individuals, who identify as a GN/GF/third gender, and consequently express no wish to have physically transition to the opposite of BAG, which is not the same as being cisgendered. Finally, the clinical interviews identified a single TG individual, who after treatment for a psychiatric condition (in casu PTSD or/and psychosis) did no longer wish a gender transition and even questioned the identity as transgender, hinting that for some individuals TG may not be a trait but rather a state that may change, which calls for careful pretransition evaluation and may be an indicator for a following detransition when the person leaves the state of TG to return to the trait of BAG. The interviews indicate four factors that might be differently prevalent across the four conceivable TG categories: namely BAG, age-of-awareness of GD/GI, history of trauma and psychiatric comorbidities. We note that BAG females with an early awareness of being TG and a traumatized upbringing is observed for all TG-binary or TG-non-binary individuals (n = 7), whereas BAG males without a traumatized upbringing is observed for 2 of 3 non-TG-non-binary persons (individuals without GD/GI and a genderfluid identity, i.e., (truly 3rd gender people). In conclusion, the interviews emphasize two complementary yet intertwined aspects of TG presentations, namely the existence of reasonably consistent categories of TG presentations as well as clinical dimensions like those well-establish in clinical psychiatry for ASD and Schiz. Notably, acknowledgement of both the dual categorical and dimensional nature of TG presentations, although critical to the understanding and adequate clinical care to TG individuals, is missing in contemporary medicine. The relevance of psychiatry and its conceptualization and clinical approach to mental illnesses is becoming increasing important given the growing and definitive evidence of a high overall prevalence of mental illness (HR = 8.62 [95% CI: 7.95-9.36]) among TG-people, most recently reported by Xapana et al. (submitted) for the entire Danish population.

Limitations

The present study is a case series based on a small non-random sample without a control group matched on age, BAG, diagnoses, family disposition of psychiatric illness, previous history of psychiatric illness, educational and socioeconomic background, and trauma. The findings of this study are therefore only indicative as possible new trends, markers, or phenotypes.

Conclusion

Previous speculative nomination of TG people having its roots in psychoanalysis, cognitive- and social constructivism should be abandoned in favour of a more phenomenological approach as they are speculative. By listening to the TG people, themselves and adapting to the phenomenology that they use about themselves, subtypes can be identified. TG people present a range of complex phenotypes, which can be categorized into four sub-groups being (i.e., TG-binary, TG-nonbinary, non-TG-non-binary, and apparent TG). These sub-groups have different treatment needs and medical programs should reflect that diversity. To consider TG a spectrum will enhance the identification of this diversity, which will secure a more individual approach in clinical TG care. Regarding sexual orientation this study reveals it may range from bisexual, heterosexual (i.e., being attracted to the opposite sex of the TG), homosexual, (i.e., being attracted to the same gender as the TG (transgay or translesbian)), to pansexual (i.e., being attracted to specific individuals regardless their gender expression) or asexual, (i.e., not being attracted sexually to other people). If working with the ADD/ADHD/ASD/OCD cluster, social workers, counsellors, psychologists, and healthcare workers should be aware of TG as a possible issue. Medical professionals should also be aware that TG people may have psychiatric issues that may have gone unnoticed, causing possible deterioration, and therefore needing treatment.

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Author Contributions statement: KDJ designed the study and did the clinical interviews, sampled the cases, the informed consents and extracted the case narratives from the clinical files. Interpretation of case narratives were done in group by KDJ, AX, SW, KC and TMW. The first draft was written by KDJ, the second draft was corrected by SW and all authors contributed to the final version of the manuscript.

Data Availability Statement: Due to the sensitivity of the original clinical case files, which are in Danish and according to GDPR, raw clinical data are not available to the public as the participants only gave informed consent to anonymous extracted case narratives.

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