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Gender confirmation hormonal treatment use in young Polish transgender binary and non-binary persons

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Abstract

Introduction: Gender confirmation hormonal treatment (GCHT) is a cornerstone of medical treatments for persistent gender dysphoria, which is expected and required by many transgender binary and non-binary individuals. Many protocols have been published, and the qualification process is guided by the World Professional Association for Transgender Health Standards of Care. The standards and other documents such as the Endocrine Society Clinical Practice Guideline provide gender confirmation hormonal care also for minors. However, the issue of starting these treatments in younger populations is still marked by controversy. This preliminary study aimed to inquire into GCHT (medications used, timing of its initiation, its tolerance, and sources of information on the treatment) in a convenience sample of young Polish transgender binary and non-binary persons.

Material and methods: A total of 166 adult transgender participants answered our online questionnaire between November 2020 and December 2021. The population was divided into 2 groups: assigned male at birth (AMB, n = 37) and assigned female at birth (AFB, n = 126). Subsequently, division into binary and non-binary was applied to these groups.

Results: Most patients (91.9% AMB and 92.2% AFB) did not use gender confirmation medical treatments before the age of 18 years. The most common medication used for GCHT before the age of 18 was cyproterone acetate for AMB and testosterone for AFB. When asked about their opinion on the timing (age) of initiating GCHT, 73.1% of the AMB and 59.2% of the AFB participants shared the view that it had been initiated much too late. By far the most common source of information on GCHT and gender confirmation surgery (GCS) was the Internet (92.2%).

Conclusions: These treatments (including pubertal blocking) seem to be rarely commenced in Poland before the age of 18 years. In adults, treatment consists mostly of either testosterone or oestradiol, and cyproterone acetate and, more seldom, spironolactone are used as antiandrogens in persons assigned male at birth. In turn, gonadotropin-releasing hormone agonists are barely used at all. Specialists need to be more aware that withholding treatment in minors with gender dysphoria is not a health-neutral option. Gonadotropin-releasing hormone agonists should also be more often considered as an alternative to cyproterone acetate in the context of long-term safety.

Key words: *gender dysphoria; transgender persons; sex reassignment procedures*

Introduction

Persistent gender dysphoria (GD) experienced by transgender binary and non-binary (TBNB) people is a basic criterion for commencing gender confirmation hormonal treatments (GCHT), according to the 7th version of the World Professional Association for Transgender Health Standards of Care (WPATH SOC) [1]. GCHT is a medical necessity for many TBNB persons and can be provided to both adults and minors as regulated by the SOC [1] and the Endocrine Society Clinical Practice Guideline (CPG) [2]. In adults, the cornerstone of GCHT is masculinizing or feminizing hormone therapy depending on the desired direction of medical and social transition. In adolescents, however, puberty blocking agents [i.e. gonadotropin-releasing hormone agonist (GnRHa)] are the first-line treatment for younger persons entering puberty (Tanner stage ≥ G2/B2). GnRH agonists are also mentioned by some guidelines [3] to be used as routine gonadal axis suppression for all hormonally transitioning individuals. Many other agents have been mentioned as useful in GCHT depending on a person's transitional goals, although not unambiguously, and some with much controversy. These include, but are not limited to, cyproterone acetate and other progestins (e.g. medroxyprogesterone, lynestrenol), spironolactone, finasteride, or minoxidil. The SOC [1] and Endocrine Society CPG [2] specify

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criteria for the initiation of masculinizing and feminizing treatments both for adults and adolescents as well criteria for the use of puberty-suppressing hormones in adolescents.

Despite this consensus, controversies and tensions exist in transgender health care, especially with regard to minors. Unanswered and disturbing questions are being asked (e.g. pertaining to reasons for an unprecedented increase in admission rates to transgender health centres, long-term outcomes of puberty-suppressing and masculinizing or feminizing treatments), and the social climate seems to have been shifting in the backward direction [4]. This fuels the emergence of controversial concepts in professional circles (e.g. so-called rapid-onset gender dysphoria syndrome [5]) and a heated debate on the further direction of transgender health care for minors [4]. As a result, approaches that are more conservative than the standard Dutch protocol [6] have recently been published (e.g. Finnish Recommendations [7]).

Transgender health care in Poland is underdeveloped. Although progress has been observed in relation to care for adults (recommendations [8], Polish translation of SOC [9], monographies [10], specialized clinical centres or teams [11]), the situation of minor adolescents with GD is disturbing. As of the time of writing this article, there are still no domestic recommendations concerning care in this population, there is a dearth of experts or clinical centres delivering this kind of care, and both public and professional opinions vary widely and are often polarized. These polarized views concern, among other things, the question of delivering any GCHT to minors.

In this context, we conducted this preliminary descriptive study to elucidate the situation of young TBNB adults in relation to the received GCHT.

The major research question concerned current and past (before the age of 16 and before the age of 18) gender confirmation hormone use in young TBNB adults. Additional questions concerned participants' opinions on the timing of initiation of GCHT, their tolerance to it, and sources of information on GCHT and gender confirmation surgery (GCS) used by TBNB.

Material and methods

Procedure and study design

This is a cross-sectional, retrospective study carried out between November 2020 and December 2021 using the computer-assisted web interviewing method with a purposive sample of young Polish TBNB adults. The survey was hosted on the SurveyMonkey platform. The inclusion criteria for the study were as follows: (i) at least 18 years of age; and (ii) informed consent to take part in the study, expressed by clicking a button to confirm that the participant had read the provided information on the study. The research project was approved by the Bioethical Committee of the Medical University of Silesia and meets the requirements of the Declaration of Helsinki.

Data selection and participants

The total number of participants was 166. The vast majority (159/166) took part in the survey in the first 2 months of its availability. The average time spent responding to the survey was 8 minutes and 46 seconds.

The participants were mostly young (71.7% were ≤ 25 years of age) city dwellers (86.8% lived in county/voivodeship capitals or other towns) (Tab. 1). Most self-identified as trans men or boys (47.0%), non-binary (20.5%), or trans women or girls (17.5%), others simply as men or boys (10.2%), women or girls (3.0%), or used other labels (1.8%). (Tab. 2)

Table 1. *Basic demographic characteristics of the total sample*

Characteristics	(n = 166)
	%
Age group (years)	
18–19	25.3
20–25	46.4
≥ 25	28.3
Place of residence	
County/Voivodeship capital	39.2
Town	47.6
Village	13.3

Table 2. *Gender Identities (GI): translation of self-labels into the study's arbitrary binary (B)–nonbinary (NB) distinction*

GI: Self-Label	All (n = 166)	GI: B–NB Distinction	
		B (n = 129)	NB (n = 34)
	%	%	%
Man/boy	10.2	13.2	–
Trans man/boy	47.0	60.5	–
Woman/girl	3.0	3.9	–
Trans woman/girl	17.5	22.5	–
Non-binary	20.5	–	100.0
Other	1.8	–	–

Table 3. *Basic characteristics of the sample with relation to the assigned gender*

Characteristics	Assigned male at birth*			Assigned female at birth#		
	All (n = 37)	B (n = 34)	NB (n = 3)	All (n = 126)	B (n = 95)	NB (n = 31)
	%	%	%	%	%	%
Age [years]						
18–19	13.5	14.7	0.0	29.37	28.42	32.26
20–25	40.5	41.2	33.3	47.62	50.53	38.71
≥ 25	46.0	44.1	66.7	23.02	21.05	29.03
Place of residence						
County/Voivodeship capital	54.1	55.9	33.3	46.03	46.32	45.16
Town	24.3	23.5	33.3	42.86	42.11	45.16
Village	21.6	20.6	33.3	11.11	11.58	9.68
Gender identity						
Man/boy	–	–	–	13.5	17.9	–
Trans man/boy	–	–	–	61.9	82.1	–
Woman/girl	13.5	14.7	–	–	–	–
Trans woman/girl	78.4	85.3	–	–	–	–
Non-binary	8.1	–	100.0	24.6	–	100.0
Other	–	–	–	–	–	–

Differences between binary (B) and non-binary (NB) participants (effect sizes): *Age: χ^2 (2) = 0.79, p_{Fisher} = 1.000, V = 0.15; Place of residence: χ^2 (2) = 0.58, p_{Fisher} = 0.584, V = 0.12; #Age: χ^2 (2) = 1.45, p = 0.486, V = 0.11; Place of residence: χ^2 (2) = 0.13, p = 0.935, V = 0.03

The initial sample of included participants (n = 166) was divided into 2 major groups — AMB (n = 37) and AFB (n = 126) — as these 2 groups were a priori assumed to be different with respect to the direction of GCHT (masculinization/defeminization *vs.* feminization/demasculinization). Secondly, the binary–non-binary division was applied to allow a detailed comparison in GCHT use. A description of the subsamples obtained this way is presented in Table 3.

Questionnaire

A short, simple, self-constructed questionnaire was used to collect study data. It consisted of open- and closed-ended questions with single- and multiple-choice options. Information for the present analysis was collected using the following questions:

Gender identity (single-choice options provided included trans man/boy, man/boy, trans woman/girl, woman/girl, non-binary, other, and "I don't know").

Basic demographic data: age (single-choice options provided included ranges of 18–19, 20–25, and > 25 years), place of residence (single-choice options of county/voivodeship capital, town, and village).

GCHT treatment: medications used (multiple-choice options from a preconceived list of available medications used in GCHT were provided), age at initiation (multiple-choice options provided were before the age of 16, before the age of 18, and currently), opinion on the timing of initiation, and tolerance to the treatment.

Sources of information on GCHT and GCS (multiple-choice options were provided from a preconceived list of possible sources).

Because this was a preliminary descriptive study, the questionnaire had not been subject to validation.

Analyses

In this paper, we used chi-square tests and proportion tests. In chi-square tests, for tables with low-frequency cells, we used Fisher's exact p value statistic. To measure the effect size, we used Cohen's d and Crammer's V. All analyses were performed with the use of Stata 17.0 software.

Results

Most AMB participants (97.3%) did not use GCHT before the age of 16 years, and it was only NB persons who did. The proportion of non-users dropped to 91.9% before the age of 18 years, and at the time of responding to the survey, or "currently", only a minority (29.7%) did not use any GCHT.

In the AMB group, the medication used most often in the subgroups that had initiated GCHT before the age of 16 and 18 years was cyproterone acetate. Only 2.7% of participants received oestradiol before the age of 18.

GCHT used currently in the AMB group included oestradiol (62.2%), cyproterone acetate (48.6%), spironolactone (8.1%), and minoxidil (2.7%).

Most AFB participants (96.9%) did not use GCHT before the age of 16, and this time it was only B persons who did. The proportion of non-users dropped to 92.2% before the age of 18, and currently almost half of them (44.2%) still do not use any GCHT.

In the AFB group, the medication used most often — and in fact the only one used — in the subgroups that had initiated GCHT before the age of 16 and 18 was testosterone. However, only 1.6% of participants received it before the age of 16, which increased to 7.0% before the age of 18.

Table 4. *Current and past (before the age of 16 and before the age of 18 years) gender confirmation hormonal treatment in binary (B) and non-binary (NB) respondents assigned male at birth*

Substance	Before the age of 16 years					Before the age of 18 years					Currently				
	All	NB	B	p*	d	All	NB	B	p	d	All	NB	B	p	d
I don't use	97.3	66.7	100.0	< 0.001	2.41	91.9	66.7	94.1	0.095	1.02	29.7	33.3	29.4	0.887	0.08
Oestradiol	0.0	0.0	0.0	–	–	2.7	0.0	2.9	0.763	0.18	62.2	33.3	64.7	0.283	0.64
Cyproterone acetate	2.7	33.3	0.0	< 0.001	2.41	5.4	33.3	2.9	0.026	1.41	48.6	33.3	50.0	0.580	0.33
Spironolactone	0.0	0.0	0.0	–	–	5.4	0.0	5.9	0.666	0.25	8.1	0.0	8.8	0.592	0.32
Minoxidil*	0.0	0.0	0.0	–	–	0.0	0.0	0.0	–	–	2.7	0.0	2.9	0.763	0.18
I don't remember the name	2.7	33.3	0.0	< 0.001	2.41	0.0	0.0	0.0	–	–	0.0	0.0	0.0	–	–

p — proportion test p value. None of the participants indicated testosterone, gonadotropin-releasing hormone agonist (GnRHa), finasteride, lynestrenol, or medroxyprogesterone use in any group. *Minoxidil, though not a hormonal agent per se, was added for cognitive purposes because we assumed the different meaning of treating alopecia in trans women or non-binary persons as opposed to cis-gender population

GCHT used presently in the AFB group included testosterone (52.7%), minoxidil (3.1%), and GnRHa (0.8%).

A detailed summary and comparisons between the B and NB groups are presented in Table 4.

When asked about their opinion on the timing (age) of initiating the gender-affirming hormonal treatment, 11.5% of the AMB and 31.0% of the AFB participants confirmed it had begun at the right time. 73.1% of the AMB and 59.2% of the AFB participants shared the view that it had been initiated much too late. No statistical differences between the AMB and AFB groups were observed.

Most of the AMB (75.0%) and AFB (83.1%) participants reported good tolerance of hormonal treatment. No one in the AMB group reported poor tolerance, and only 2.8% of the AFB group did. The differences were statistically insignificant.

Out of all 166 participants, 92.2% got information on GCHT and GCS from the Internet, 86.8% from other trans persons, 35.5% from an attending physician, 31.3% from specialist literature, and 1.8% declared not to have consulted any sources of information. No statistical differences between the AMB and AFB groups were observed.

Discussion

The major aim of this preliminary descriptive study was to inquire into gender confirmation hormone use in young TBNB adults in Poland.

Our results confirm that in Poland GCHT is rarely used (less than in 10% of cases) in either AMB or AFB people before the age of 18 years. What is more, there was not a single person who declared having had GnRHa prescribed before this age, and if any antiandrogenic medications were prescribed, they were cyproterone acetate or spironolactone. This may suggest that pubertal blocking, which is recommended for some minors with gender dysphoria [1,2], is a rare approach in Polish transgender health care. The same conclusion can be drawn from the fact that only a small minority of the AMB (2.7%) and AFB (7.0%) persons were prescribed feminizing (oestradiol) or masculinizing (testosterone) treatments, respectively, before the age of 18 years. Therefore, it seems that Polish specialists

Table 5. *Current and past (before the age of 16 and before the age of 18 years) gender confirmation hormonal treatment in binary (B) and non-binary (NB) respondents assigned female at birth*

Substance	Before the age of 16 years					Before the age of 18 years					Currently				
	All	NB	B	p	d	All	NB	B	p	d	All	NB	B	p	d
I don't use	96.9	100.0	95.8	0.246	0.24	92.2	96.8	90.5	0.264	0.23	44.2	77.4	33.7	< 0.001	0.94
Testosterone	1.6	0.0	2.1	0.415	0.17	7.0	0.0	9.5	0.075	0.37	52.7	19.4	64.2	< 0.001	0.97
GnRHa	0.0	0.0	0.0	–	–	0.0	0.0	0.0	–	–	0.8	0.0	1.1	0.566	0.12
Minoxidil	0.0	0.0	0.0	–	–	0.0	0.0	0.0	–	–	3.1	0.0	4.2	0.246	0.24

p — proportion test p value. None of the participants indicated oestradiol, cyproterone acetate, spironolactone, finasteride, lynestrenol, or medroxyprogesterone use in any group. None of the participants indicated the "I don't remember" answer; GnRHa — gonadotropin-releasing hormone agonist

involved in transgender health care are quite wary of initiating pubertal blocking or GCHT in minors. Based on our clinical experience and knowledge of the professional milieu rather than systematic research, we would put forth several hypotheses explaining this reluctance. One addresses the adverse Polish legal context, in which transgender health care and legal transition are to a large extent unregulated [12]. This fact may lead some practitioners to the conclusion that GCHT in minors is legally dubious. This may be additionally reinforced by the fact that none of the substances used in GCHT has been registered for the treatment of "transsexualism", i.e. the F64.0 category in the International Classification of Diseases 10th edition (ICD-10) system. The use of GCHT in minors is thus off-label and could even be interpreted as experimental. An alternative hypothesis could be that clinical or developmental conservative thinking assumes that minors are not mature enough to make informed decisions as to the irreversible clinical interventions. The notion of the normative adolescent crisis with inherent emotional instability and unaccomplished identity formation process could be invoked here. Additionally, the lack of commonly accepted consensus in this age group, and divergent opinions and practices around the world, can perpetuate this situation [4]. What is more, there are no Polish standards or recommendations guiding clinical work with this population, and the knowledge of any other documents such as WPATH SOC [1] or Endocrine Society CPG [2] and publications (e.g. on the Dutch protocol) [7] may still be limited. However, as mentioned before, these are only our assumptions that need to be supported by research conducted on practitioners involved in transgender health care. Some indirect evidence comes from reports based on studies conducted on TBNB people and their experience with the health care system in Poland. The title of one of the latest reports ("Overdiagnosed but Underserved") is meaningful in this respect and speaks for itself [13]. In our own clinical experience, we tend to meet domestic specialists who are overconcerned with a proper diagnosis (and the threat of mistake) and, to a lesser extent, with a prolonged suffering resulting from the delayed gender confirmation medical treatments in gender dysphoric individuals (especially youths).

Alongside intuitive expectations and previous research [11], the comparisons of B and NB individuals revealed that it was the former group in which a higher proportion of subjects currently used GCHT (both feminizing/masculinizing and antiandrogen). The results as to the antiandrogen use before the age of 16 and 18 years were the opposite, but it is impossible to formulate any binding conclusions because the NB AMB group consisted of only 3 participants.

Another observation is that the use of GnRHa is still limited in Poland, not only as puberty suppression agents but also as a gonadal axis blocking strategy both in AMB and AFB persons. The most commonly used antiandrogens were cyproterone acetate and spironolactone. This is understandable from the financial perspective, but overreliance on the former needs caution in the face of growing doubts about the safety of this strategy [14]. The use of appropriate doses of cyproterone acetate (i.e. up to 10 mg/day) should be encouraged.

Our study indirectly reveals a well-known tension that exists between the patients' expectations and the clinical reality. Most participants confirmed the opinion that the GCHT had been initiated much too late. We suspect that limited access and/or specialists' reluctance to pursue GCHT may be responsible for this situation [13]. There was no further inquiry in the study into the possible consequences or correlates of delaying the initiation of GCHT, but some authors [15] point to the deleterious aftermath thereof. Current leading guidelines (e.g. the WPATH SOC [1], and the Endocrine Society CPG [2]) accept the use of both GnRHa and masculinizing/feminizing hormone therapy in adolescents but do not precisely specify the exact age of commencing the treatment. Apart from the puberty advancement, the age of 12 years was suggested for GnRHa and the age 16 years for masculinizing/feminizing hormone therapy initiation, as suggested and studied in the so-called Dutch protocol, which still serves as a reference point [see 6].

Our study confirms the well-known fact that TBNB patients seek information on GCMT, and only a minority does not do so. However, as most of the participants listed the Internet and other trans persons as their sources of information, clinicians need to be mindful and responsive to address and clarify all misconceptions and ambiguities in the psychoeducational process. This is a vital part of obtaining the patient's informed consent to treatment, which is a cornerstone of the current clinical approaches to GCMT [1, 8].

Before conclusions are drawn from our study, its limitations need to be addressed as well. They are as follows: 1) the use of a simple unvalidated questionnaire with simplified demographic sections, which renders the results preliminary; 2) retrospective data collection, which could have been a source of recollection bias, although a limited amount of information was collected in the survey; and 3) the use of an Internet survey — an imperfect but nevertheless accepted means of studying populations such as ours that are difficult to reach [16] — could lead to an overrepresentation of younger, highly educated city dwellers with access to the Internet. However, our study has one substantial strength: it provides some preliminary insight into

the patterns of GCHT use in young Polish trans persons. However, considering its limitations and character, any generalizations should be made with caution.

Conclusions

We would like to point out 2 major conclusions of the study. First, in Poland GCHT is rarely initiated before the age of majority. Secondly, GCHT is heavily based on oestradiol or testosterone use and, in the case of AMB persons, cyproterone acetate. The use of other antiandrogenic treatments (i.e. spironolactone) and GnRHa is scarce, and the puberty-delaying approach seems non-existent.

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