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TRANSGENDER HEALTH

Genders and Individual Treatment Progress in (Non-)Binary Trans Individuals

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ABSTRACT

Background: Health care for transgender and transsexual (ie, trans) individuals has long been based on a binary understanding of gender (ie, feminine vs masculine). However, the existence of non-binary or genderqueer (NBGQ) genders is increasingly recognized by academic and/or health care professionals.

Aim: To gain insight into the individual health care experiences and needs of binary and NBGQ individuals to improve their health care outcomes and experience.

Methods: Data were collected using an online survey study on experiences with trans health care. The non-clinical sample consisted of 415 trans individuals. An individual treatment progress score was calculated to report and compare participants' individual progress toward treatment completion and consider the individual treatment needs and definitions of completed treatment (ie, amount and types of different treatments needed to complete one's medical transition).

Outcomes: Main outcome measures were (i) general and trans-related sociodemographic data and (ii) received and planned treatments.

Results: Participants reported binary (81.7%) and different NBGQ (18.3%) genders. The 2 groups differed significantly in basic demographic data (eg, mean age; $P < .05$). NBGQ participants reported significantly fewer received treatments compared with binary participants. For planned treatments, binary participants reported more treatments related to primary sex characteristics only. Binary participants required more treatments for a completed treatment than NBGQ participants (6.0 vs 4.0). There were no differences with regard to individual treatment progress score.

Clinical Translation: Because traditional binary-focused treatment practice could have hindered NBGQ individuals from accessing trans health care or sufficiently articulating their needs, health care professionals are encouraged to provide a holistic and individual treatment approach and acknowledge genders outside the gender binary to address their needs appropriately.

Strengths and Limitations: Because the study was made inclusive for non-patients and individuals who decided against trans health care, bias from a participant-patient double role was prevented, which is the reason the results are likely to have a higher level of validity than a clinical sample. However, because of the anonymity of an online survey, it remains unclear whether NBGQ individuals live according to their gender identity in their everyday life.

Conclusion: The study highlights the broad spectrum of genders in trans-individuals and associated health care needs and provides a novel approach to measure individual treatment progress in trans individuals. **Koehler A, Eyssel J, Nieder TO. Genders and Individual Treatment Progress in (Non-)Binary Trans Individuals. J Sex Med 2018;15:102−113.**

Key Words: Transgender; Gender Dysphoria; Non-Binary; Genderqueer; Transgender Health Care; Treatment Request; Individual Treatment Progress Score

INTRODUCTION

Until recently, individuals who identified as a gender that did not match their sex assigned at birth were most commonly described as transsexual in the medical literature and were subjected to rather fixed expectations regarding their gender identity (eg, assuming an exclusive identification with the other gender).

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Moreover, transsexualism as a diagnosis in the *International Classification of Diseases, 10th Revision* (ICD-10) was closely linked to hormonal and surgical treatment to alter the body to become as congruent as possible with the "opposite" sex. In a similar way, the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition* (DSM-IV) described gender identity disorder as a strong and persistent cross-gender identification operationalized by preferences for stereotypical cross-gender behaviors. In the recent past, these expectations were criticized by trans activists and scholars.[1] In consequence, the 7th version of the World Professional Association for Transgender Health's Standards of Care (WPATH SoC7) uses the terms *transsexual, transgender,* and *gender non-conforming* to address a broader range of individuals experiencing a gender not matching their sex assigned at birth.[2] Contrary to *transsexualism* or *gender identity disorder,* the umbrella term *trans* refers to the wide spectrum of individuals experiencing their gender as not in line with their sex assigned at birth. It includes genders within the binary (eg, transsexual woman) and non-binary or genderqueer (NBGQ) genders. NBGQ individuals identify with a gender that is temporarily or permanently neither exclusively masculine nor feminine but rather is composed of masculine and feminine parts (eg, 2-spirit), oscillates between genders (eg, genderfluid), is situated beyond the binary (eg, genderqueer), or rejects the binary (eg, agender[3]). Especially in Western English-speaking countries, *transgender* is commonly used as an umbrella term. Like the term *trans,* it aims at including all individuals experiencing a gender not matching their sex assigned at birth. However, some trans individuals reject the term *transgender* (eg, individuals identifying as transsexual). Therefore, *trans* as an umbrella term might be even more inclusive than the term *transgender.*

Research has indicated that approximately 80% of the trans-population has a binary understanding of their gender (ie, exclusively masculine or feminine), whereas at least 20% identify as NBGQ (eg, [4]). In recent years, NBGQ genders have become increasingly recognized by academia and health care.[3,5] Table 1 presents an overview of the academic literature on NBGQ individuals and related genders used and/or identified in the empirical literature (see "Terminology"). In several empirical studies, a ratio of 1:2 regarding sex assigned at birth (1/3 of NBGQ individuals were assigned male at birth, and 2/3 were assigned female at birth) has been reported (eg, [21]). However, not all studies with NBGQ individuals have found similar results[15] (Table 1). Except for a small number of studies, [9] evidence on demographic characteristics to describe the population of NBGQ individuals in Western cultures is rare. However, the phenomenon has gained more attention in non-Western cultures (eg, in India or Thailand[22]).

The diagnostic criteria for gender issues with clinical relevance have changed over the years and have usually followed a binary understanding of gender.[23,24] The 5th edition of the DSM (DSM-5)[25] operationalizes gender dysphoria using 2 core criteria: a marked incongruence between one's experienced or expressed gender and the sex assigned at birth and an association with "clinically significant distress or impairment in social, occupational, or other important areas of functioning."[25] In contrast to previous diagnostic criteria, gender dysphoria focuses exclusively on the distress caused by assigned vs experienced gender. For the first time, NBGQ genders are explicitly mentioned in the DSM-5 criteria ("alternative gender different from one's assigned gender"[25]).

Regarding (mental) health and health care issues of NBGQ individuals (eg, access to health care), research evidence is rare. Several studies have reported that NBGQ people experience health care issues that are unique to their gender identity and therefore do not conform to experiences of binary trans individuals.[13] Table 1 presents evidence on (mental) health and health care issues of NBGQ individuals (see "Outcomes related to NBGQ gender (mental) health and/or health care issues"). For specific aspects experienced by NBGQ individuals in health care, Lykens[18] extracted 5 themes using a qualitative approach: (i) health care providers' inability to see beyond the (trans-)gender binary, (ii) fears of being treated by an incompetent provider, especially regarding the unique perspectives and needs of NBGQ individuals, (iii) the need for NBGQ individuals to position themselves and their identity within the gender binary to receive (access to) the care they desire, (iv) the inability to see themselves as NBGQ individuals reflected in medical and health care staff (eg, NBGQ staff), and (v) issues of health insurance coverage. The WPATH SoC7 already recognizes NBGQ individuals' "unique experiences that may transcend a male/female binary understanding of gender" [p. 171] and seek to enable access to professional health care for NBGQ individuals. The WPATH also acknowledges NBGQ identities in their statement on the legal recognition of gender identity: "that choices of identity limited to Male or Female may be inadequate to reflect all gender identities."[26] In addition, the American Psychological Association[27] has called for an understanding of gender as "a non-binary construct that allows for a range of gender identities" [p. 834]. The World Medical Association recognized NBGQ individuals in a statement published in 2015 and "emphasises that everyone has the right to determine one's own gender and recognises the diversity of possibilities in this respect."[28] Thus, although NBGQ individuals are recognized in empirical research, treatment guidelines, and health care policy statements, they remain challenged by diagnostic procedures and treatment protocols generally assuming traditional transsexual trajectories.[24,29]

Rationale and Research Questions

Despite negative experiences with health care services, an increasing number of NBGQ individuals are presenting for clinical gender-affirming treatment services and seeking gender-affirming treatment in the future can be assumed.[3] This is, among other things (eg, social liberalization toward gender minorities), due to revisions of diagnostic criteria (eg, DSM-5[25] and ICD-11[30]). Because existing research has highlighter that NBGQ individuals

Table 1. Recent empirical literature on NBGQ genders

	Participants				NBGQ respondents			
Study	MtF	FtM	Transvestite or crossdresser	NBGQ gender	Terminology	MAAB	FAAB	Outcomes related to NBGQ gender (mental) health and/or health care issues
Hines[6] (N = 30)					Gender terrorist, intersex by design, intentional mutation, hermaphrodyke, queer trannie boy			
Bockting[7] (N = 1,229)	Unknown	Unknown	Unknown	Unknown	Shemale; bigender; 2-spirit; gender neutral; genderless; androgyne; ambiguous; intergendered; third gender; pan-, poly-, or omnigendered; dynamically gendered; gender fluid; non-biological intersexed; in-between and beyond	Unknown	Unknown	
Motmans et al[8] (N = 236)	50.4%	16.9%	3.8%	28.8%	Neither male nor female, male and female, other	20.3%	8.5%	
Kuper et al[9] (N = 292)	2.1%	3.1%		50.7%	Genderqueer, transgender, 2-spirit, bigender, intergender, not listed	Unknown	Unknown	
Kreukels et al[10] (N = 201)	64.2%	35.8%			In between, other	13.0%	18.0%	
Smith et al[11] (N = 192)	13.0%	13.0%		37.0%	Genderqueer, gender fluid, no gender or agender, bigender, other	Unknown	Unknown	
Eyssel et al[12] (N = 415)	42.6%	38.6%		19.0%	Neither exclusively male or female (eg, genderqueer, in between, agender, genderpunk)	5.8%	13.2%	
Factor and Rothblum[13] (N = 166)	30.1%	31.3%		38.6%	Neither completely female nor completely male	Unknown	Unknown	Smaller percentages of treatment experiences (hormones, genital surgery, other treatments) in non-binary trans-individuals vs binary trans-individuals
Grant et al[4] (N = 6,436)	47.0%	28.0%	14.0%	12.0%	Gender non-conforming	3.0%	9.0%	Higher rates of minority stress-related health issues in non-binary individuals (eg, harassment, sexual assault, suicidal ideation and discrimination in health care settings); 36% of non-binary participants postponed their medical care for fear of medical complications and/or bias (Harrison et al, 2012)

(continued)

Table 1. Continued

	Participants				NBGQ respondents			
Study	MtF	FtM	Transvestite or crossdresser	NBGQ gender	Terminology	MAAB	FAAB	Outcomes related to NBGQ gender (mental) health and/or health care issues
Budge et al[14] (N = 64)				100.0 %	Genderqueer	Unknown	Unknown	High levels of anxiety and depression
European Union Agency for Fundamental Rights[15] (N = 6,579)	17.0%	9.0%	8.0%	66.0%	Transgender, gender-variant, queer, or other	39.9%	24.4%	Male and female crossdressers, gender variant, queer, and other respondents were most likely to not want or need health care; queer and other respondents were most likely to not know if they want health care (19%); lower rates of discrimination in non-binary trans-individuals vs binary trans-individuals (17–21% vs 30–43% in past 12 mo)
Beek et al[16] (N = 360)	64.2%	34.8%		1.0%	Non-binary	50.0%	50.0%	Only a small number of applicants requested partial treatment to bring their body into alignment with their non-binary gender identity
Scheim and Bauer[17] (N = 433)	34.4%	44.1%		20.0%	Fluid, crossdresser, bigender, gender-queer, 2-spirit	27.0%	14.0%	Smaller percentages of social and/or medical transition in non-binary trans-individuals vs binary trans-individuals; most (63%; 95% CI = 42–81) non-transitioned MtFs had non-binary gender identities (predominantly crossdresser) and were less likely to report plans to transition
Lykens[18] (N = 10)				100.0%	Genderqueer, trans, androgynous, other, 2-spirit	20%	80%	5 factors related to specific health care needs of NBGQ individuals
Zeluf et al[19] (N = 796)	19.0%	24.0%	14.0%	44.0%	Man and woman, in between man and woman, queer, none, neither man nor woman, unsure	Unknown	Unknown	Poor self-rated health, high frequencies of self-reported disability

FAAB = female sex assigned at birth; FtM = female to male; MAAB = male sex assigned at birth; MtF = male to female; NBGQ = non-binary or genderqueer.

Table 2. Response options and categorization

Binary genders	Partly NBGQ gender	NBGQ Genders
Female, male, trans-female, trans-male, trans*, trans, transgender, transident, transsexual, other (open answer)	≥1 binary and 1 NBGQ gender	Bigender, genderfluid, genderqueer, in between, inter*, inter, agender, other (open answer)

NBGQ = non-binary or genderqueer.

have specific health care needs and encounter more difficulties in having these needs met, conducting research on NBGQ genders and associated health care experiences and needs is crucial to improve relevant health care services for them.[3] However, evidence on basic demographic and clinical characteristics of NBGQ individuals seems to be lacking. Moreover, only few studies have investigated health care issues (eg, motivations to seek gender-affirming interventions) of NBGQ individuals.[4,18] Therefore, the present study sought to provide further evidence on NBGQ individuals' genders, experiences, and needs regarding transition-related health care. Therefore, it sought to answer the following research questions:

1. Do binary and NBGQ trans individuals differ in basic descriptive and demographic variables? If so, how?
2. Do binary and NBGQ trans individuals differ in treatment experiences, planned treatment, and treatment progress? If so, how?

METHODS

The present study is part of a research project on the needs and concerns of trans-individuals regarding interdisciplinary transition-related health care in Germany.[12] A survey was developed according to a participatory approach (for details, see Eyssel et al[12]) and completed online by a non-clinical sample. The study received ethical approval.

Participants

To be eligible for study participation, participants had to identify as trans (used as an umbrella term for, eg, transgender, transsexual, genderqueer) and be at least 16 years of age.[20] Whether participants had already accessed trans health care (THC) or had plans to do so did not affect their eligibility to participate.

Participant Recruitment

To recruit participants for the study, an invitation to the study with a link to the survey was emailed to a comprehensive list of trans support groups across Germany, trans activist groups, and trans-related contacts of the researchers and posted in trans-related groups on social network websites. In addition, flyers were displayed in office-based practices of local THC professionals and local lesbian, gay, bisexual, and trans centers. Data collection took place over a period of 2 months in the summer of 2015.

Measures

The present study analyzed items on sociodemographic data and treatments received and planned. The sex assigned at birth was recorded by the question, "What is the sex you were assigned at birth?" (Response options were male or female). The experienced gender was covered by the question, "What is your gender identity?" (Response options are listed in Table 2). Multiple answers were possible. Participants were categorized as NBGQ if they reported at least 1 NBGQ gender-related term. Moreover, participants could add options missing from the response options by selecting "other" and filling in an open text field. To obtain information on treatment experiences, participants were asked to specify whether they had received and/or planned the most common treatment options in THC (eg, hormonal therapy; response options listed in Table 3).

Data Analysis

According to their answers on gender, participants were classified as binary or NBGQ. For statistical reasons, NBGQ genders and individuals who indicated they partly identified as NBGQ (eg, a combined answer of genderqueer and transwoman) were combined into 1 group. Open text answers were assigned to the 2 categories. The χ^2 tests were computed to assess differences in categorical demographic variables (eg, sex assigned at birth). A Mann-Whitney U-test was calculated to determine age differences between NBGQ and binary participants. Treatments were categorized into 4 categories (mental health counseling, hormonal treatment, treatments regarding primary sex characteristics, and additional treatments not concerning primary sex characteristics; Table 3) for analysis. The χ^2 tests were computed to obtain differences between binary and NBGQ participants within treatment categories. To report the percentage of completed treatments, we computed an individual treatment progress score (ITPS[12,31]; see Supplementary Materials for details). To do so, we summed the numbers of received and planned treatments for each participant. This sum constituted a score of 100% on the ITPS. Then, we converted the number of received treatments into percentages for each participant. This enabled us to compare individual participants or participant groups regarding their treatment and address variations in the number of interventions relevant to individual participants and available for each sex (cf [12]). A Mann-Whitney U-test was used to examine group differences between binary and NBGQ participants regarding the ITPS. SPSS 22.0 (IBM Corp, Armonk, NY, USA) was used for all statistical calculations.

Table 3. Categorization principles of treatment options

	Response options	
Treatment category	MAAB	FAAB
Mental health counseling	Mental health counseling	Mental health counseling
Hormonal therapy	Hormonal therapy	Hormonal therapy
Treatments concerning primary sex characteristics	Genital surgery	Hysterectomy, ovariectomy, epithesis, metoidioplasty, phalloplasty
Additional treatments not concerning primary sex characteristics	Hair removal, speech therapy, chest reconstruction, hair transplantation, Adam's apple surgery, phonosurgery, facial surgery	Speech therapy, mastectomy

FAAB = female sex assigned at birth; MAAB = male sex assigned at birth.

RESULTS

Distribution of Genders

The present sample consisted of 415 participants. 339 (81.7%) reported a binary gender, 76 (18.3%) reported a NBGQ gender (for details, see Table 4), and 20 (62.5% of the NBGQ group) reported an additional NBGQ gender not listed. The most common was "neither*nor" (n = 5).

Differences in Demographic Characteristics

Table 5 presents a detailed overview of differences in demographic characteristics of the present sample. A written summary is presented in the Discussion. Binary and NBGQ participants differed significantly in their sex assigned at birth (NBGQ participants were significantly more often assigned female at birth), their age (overall and for a male sex assigned at birth; binary participants were significantly older than NBGQ participants), their place of residence (NBGQ participants reported more frequently living in a city with >100,000 residents), their educational background (NBGQ participants reported a significantly higher educational level), and employment (binary participants were more often in full-time employment, whereas NBGQ participants were more frequently unemployed). For occupational status, NBGQ participants were more frequently students.

Table 4. Genders and sex assigned at birth

	Binary gender, % (n)*	NBGQ gender, % (n)*	FAAB, % (n)*	MAAB, % (n)*
Total	100.0 (339)	100.0 (76)	100.0 (216)	100.0 (199)
Female	33.6 (114)	13.2 (10)	0.9 (2)	61.3 (122)
Male	31.9 (108)	11.8 (9)	52.3 (113)	2.0 (4)
Trans-female	22.1 (75)	2.6 (2)	0.0 (0)	38.7 (77)
Trans-male	31.6 (107)	25.0 (19)	58.3 (126)	0.0 (0)
Trans†	13.9 (47)	38.2 (29)	25.0 (54)	11.1 (22)
Trans	4.4 (15)	7.9 (6)	7.4 (16)	2.5 (5)
Transgender	13.6 (46)	28.9 (22)	19.0 (41)	13.6 (27)
Transident	11.8 (40)	7.9 (6)	9.7 (21)	12.6 (25)
Transsexual	14.7 (50)	5.3 (4)	8.8 (19)	17.6 (35)
Bigender	—	5.3 (4)	0.9 (2)	1.0 (2)
Genderfluid	—	18.4 (14)	3.7 (8)	3.0 (6)
Genderqueer	—	47.4 (36)	14.4 (31)	2.5 (5)
In between	—	14.5 (11)	4.2 (9)	1.0 (2)
Inter†	—	3.9 (3)	0.9 (2)	0.5 (1)
Inter	—	1.3 (1)	0.5 (1)	0.0 (0)
Agender	—	17.1 (13)	5.1 (11)	1.0 (2)
Could not or would not answer question	—	14.5 (11)	3.2 (7)	2.0 (4)
Other (eg, neither*nor, partly transsexual, woman with transsexual history)	3.5 (12)	26.3 (20)	8.8 (19)	6.5 (13)

FAAB = female sex assigned at birth; MAAB = male sex assigned at birth; NBGQ = non-binary or genderqueer.
*Multiple answer options resulted in numbers presented in the table that do not result in the sum of 100.
†Binary genders also could emerge in the NBGQ column because of multiple answer options and the categorization as partly NBGQ (see Methods).

Table 5. Basic demographic characteristics

	Binary gender, % (n)	NBGQ gender, % (n)	Statistics	*P* value
Sample size	339	76		
Sex assigned at birth			$\chi^2(1, N = 415) = 11.66$	.001
MAAB	51.9 (176)	30.3 (23)		
FAAB	48.1 (163)	69.7 (53)		
Age (y), median				
All	39.00	35.00	U = 10726.00	.02
Assigned female	32.00	33.00	U = 4676.00	.37
Assigned male	46.00	38.00	U = 1417.50	.02
Country of birth			$\chi^2(2, N = 415) = 6.42$	.04
Germany	92.0 (312)	85.5 (65)		
Other European countries	5.3 (18)	13.2 (10)		
Non-European countries	2.7 (9)	1.3 (1)		
Population of place of residence			$\chi^2(3, N = 410) = 14.33$	.002
<20,000	28.1 (94)	17.1 (13)		
20,000–100,000	17.1 (57)	11.3 (4)		
100,000–1,000,000	27.2 (91)	40.8 (31)		
>1,000,000	27.5 (92)	36.8 (28)		
Educational background			$\chi^2(3, N = 408) = 19.71$	<.0001
Low	9.5 (32)	0.0 (0)		
Medium	21.2 (72)	6.6 (5)		
High	64.9 (220)	89.5 (58)		
Other	2.7 (9)	2.6 (2)		
Could not or would not answer question*	1.8 (6)	1.3 (1)		
Employment			$\chi^2(4, N = 387) = 10.89$	.03
Full time	54.3 (184)	38.2 (29)		
Part time	10.9 (37)	13.2 (10)		
Mini job (ie, individual earnings < 400€/mo)	6.8 (23)	14.5 (11)		
Unemployed	16.2 (55)	23.7 (18)		
Retired	5.3 (18)	2.6 (2)		
Could not or would not answer question*	6.5 (22)	7.9 (6)		
Occupational status†				
Student	18.5 (62)	35.5 (27)		
Vocational training	6.0 (20)	3.9 (3)		
Unskilled worker	3.6 (12)	6.6 (5)		
Operative	5.1 (17)	3.9 (3)		
Employee	49.1 (165)	39.5 (30)		
Civil servant	3.9 (13)	1.3 (1)		
Self-employed	16.7 (56)	19.7 (15)		
Could not or would not answer question	5.1 (17)	10.5 (8)		

FAAB = female sex assigned at birth; MAAB = male sex assigned at birth; NBGQ = non-binary or genderqueer.
*Category was excluded from statistical analysis and is reported only descriptively.
†Because we offered the possibility of multiple answers, these data could not be analyzed statistically and are reported only descriptively.

Received Treatments

Of those who accessed transition-related health care, binary participants reported a significantly larger percentage compared with NBGQ participants for all 4 treatment categories (mental health counseling, hormonal treatment, treatments regarding primary sex characteristics, and additional treatments not concerning primary sex characteristics; Table 6, Figure 1). Moreover, binary participants (median = 3.00) differed significantly from NBGQ participants (median = 1.00) in the average number of treatments (U = 8096.50, $P < .001$).

Planned Treatments

For planned treatment, there were no significant differences concerning mental health counseling, hormonal treatment, and additional treatments that did not concern primary sex characteristics. For treatments aimed at primary sex characteristics,

Table 6. Completed and planned treatments

	Binary gender, % (n)	NBGQ gender, % (n)	Statistics	*P* value
Completed treatments				
Mental health counseling	81.4 (276)	65.8 (50)	$\chi^2(1, N = 415) = 9.00$	.004
Hormonal treatment	77.0 (261)	46.1 (35)	$\chi^2(1, N = 415) = 29.01$	<.0001
Treatments concerning primary sex characteristics	40.1 (136)	17.1 (13)	$\chi^2(1, N = 415) = 14.29$	<.0001
Additional treatments not concerning primary sex characteristics	65.2 (221)	40.8 (31)	$\chi^2(1, N = 415) = 15.50$	<.0001
Planned treatments				
Mental health counseling	6.8 (23)	7.9 (6)	$\chi^2(1, N = 415) = 0.12$	.80
Hormonal treatment	15.9 (54)	22.4 (17)	$\chi^2(1, N = 415) = 1.82$	.18
Treatments concerning primary sex characteristics	43.4 (147)	19.7 (15)	$\chi^2(1, N = 415) = 14.56$	<.0001
Additional treatments not concerning primary sex characteristics	38.9 (132)	32.9 (25)	$\chi^2(1, N = 415) = 0.96$	.33

NBGQ = non-binary or genderqueer.

a significantly larger percentage of binary participants reported intentions to undergo those treatments than NBGQ participants (Table 6, Figure 1). There were no significant differences between binary (median = 2.00) and NBGQ (median = 2.00) participants in the average number of planned treatments (U = 11169.00, $P = .06$).

Treatment Progress

Binary participants required an average number of 6.0 (SD = 2.4) treatments for a completed treatment (ie, ITPS = 100%). NBGQ individuals required an average number of 4.0 (SD = 2.8) treatments for a completed treatment. There was a significant difference between binary (median = 6.00) and NBGQ (median = 4.00) participants in the number of treatments for a completed treatment (U = 7511.00, $P < .001$). For their treatment progress by date of data collection (ie, ITPS as a measure for current treatment progress), we found no differences between binary participants (median = 66.67) and NBGQ participants (median = 61.25; U = 9417.00, $P = .43$; Figure 2).

DISCUSSION

Differences in Demographic Characteristics

The present study shows that binary and NBGQ participants differ in demographic variables and received and planned treatments. For genders, binary and NBGQ participants used gender concepts (eg, transsexual, genderqueer) similar to those reported in previous studies.[6,7,11] "Neither*nor" was used as a noteworthy additional NBGQ gender. For sex assigned at birth, the present study also shows results similar to previous findings reporting a large percentage of NBGQ individuals assigned female at birth.[4,8,10] Moreover, binary participants were significantly older than NBGQ participants. This also is in line with previous results[13] assuming that identifying with a gender from the NBGQ spectrum is more common in younger individuals. That NBGQ genders have become recognized not only in health care and academia but also in media only within the past few years[3,5] might be a reason for the age difference. In addition, on the one hand, a NBGQ gender could be understood as belonging to an (adolescent) transitional phase among younger trans individuals

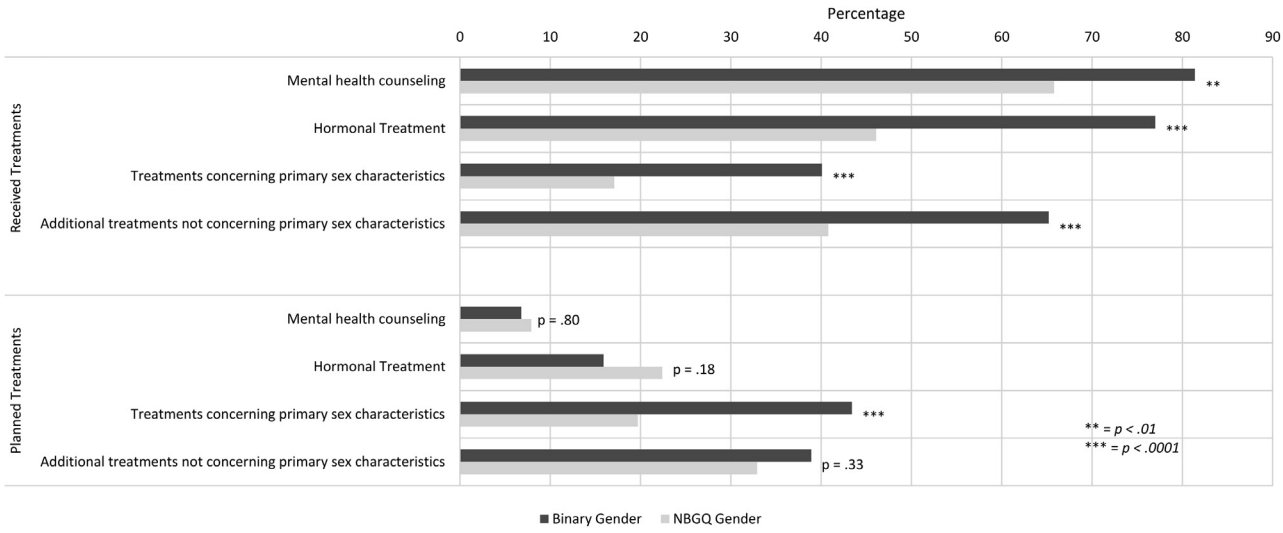

Figure 1. Planned and received treatments.

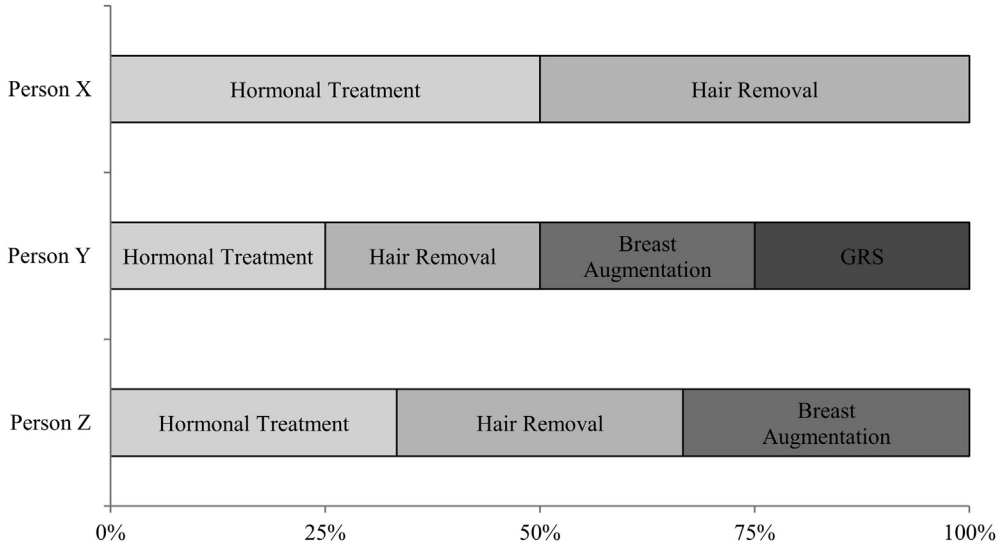

Figure 2. Individual Treatment Score (ITPS). GRS = gender reassignment surgery.

during a developmental process to a postadolescent binary gender. On the other hand, because the binary gender is less dominating in society and health care, younger trans individuals, who are still exploring their gender, might feel more able to express a NBGQ gender compared with previous generations at the same age who might have felt more constrained by the binary gender dominating society and health care.

In addition, NBGQ participants reported more frequently living in cities with more than 100,000 inhabitants. A similar, but slightly weaker, relation was found by a larger European survey.[15] One can conclude that urban areas allow NBGQ individuals to express their genders with a lower risk for social exclusion. Moreover, urban areas might provide easier contact opportunities to NBGQ communities and more cultural and political spaces that make NBGQ issues more accessible than in rural areas. Although previous studies investigated the employment, educational, and occupational situation of trans-individuals,[4,9] no comparisons between binary and NBGQ individuals have been made thus far. The present study found a higher educational level in NBGQ participants but also a higher level of unemployment or mini jobs. The fact that NBGQ participants were significantly younger and more frequently students than binary participants might be another reason they were less often employed in full-time or part-time employment. However, certain negative stereotypes against people living outside the binary might contribute to difficulties in finding part- or full-time employment despite higher levels of education.

In addition, the higher level of education in NBGQ individuals might have led to a greater willingness to critically reflect current gender norms. This in turn might have resulted in greater openness toward NBGQ genders. Moreover, better access to knowledge criticizing the binary gender and heteronormativity (which describes the assumption that everyone falls into 2 distinct gender categories [male or female] associated with a "natural" gender role and heterosexuality as the default sexual orientation[32]; eg, social constructivism) for students and/or highly educated individuals could promote the existence and/or visibility of NBGQ genders.

Differences in Received Treatments

For the use of THC services, the present study found that a smaller number of NBGQ individuals than binary participants had accessed health care. These results replicate findings from previous studies (eg, [13,16,17]). In addition, the present results suggest that NBGQ individuals require a smaller number of treatments to consider their overall treatment as complete. This might be an important reason participants in the present study had accessed a smaller number of treatments. For the ITPS, binary and NBGQ participants were at a similar stage in their transition by the date of data collection (~60%). The ITPS has not been used by any other studies to examine the treatment progress of trans-individuals. Therefore, further research is needed to enable a more nuanced interpretation of the present results.

ITPS as a Measure for Treatment Progress and Differences in Planned Treatments

Because binary and NBGQ participants differed in the number of treatments to complete their treatment, the introduction of the ITPS is an innovative and helpful tool to assess and compare treatment progress across the trans-population. Unlike previous research (for a review, see Murad et al[33]), the ITPS does not assume a fixed end of a gender-affirming treatment (usually hormonal treatment and genital surgery), which is especially rare in NBGQ individuals given the more dynamic character of their transition compared with binary

individuals.[3,16] Instead, the ITPS allows the examination of treatment requests that do not fit the normative treatment assumptions about (binary) trans individuals applying for THC.

Concerning planned treatment, NBGQ individuals did not differ from binary participants in mental health counseling, hormonal treatment, and additional treatments not concerning primary sex characteristics. However, a significantly larger percentage of binary participants reported intentions to undergo treatments for primary sex characteristics than NBGQ participants. These results were in line with evidence from previous studies.[13,15] A possible explanation for this difference might come from the principle of NBGQ genders. Primary sex characteristics are one of the most important indicators for a distinct gender allocation (generally female or male[34]). Because NBGQ individuals mostly avoid a distinct gender allocation, they also might avoid THC interventions with a strong impact on the assignment to the opposite sex (eg, genital surgery). However, other treatments (eg, hormonal therapy) do have a weaker effect on a distinct gender assignment and therefore are required by binary and NBGQ individuals in a comparable manner.

CONCLUSION

Clinical Implications

The present study reports results from a non-clinical online sample that highlights the importance of recognizing the diversity of genders across trans individuals (binary and non-binary). Because of revised diagnostic criteria, among other changes,[16,25,30] it is highly likely that an increasing number of NBGQ individuals will access clinical services for gender-affirming treatment in the near future. As long as there is diagnostic pressure to position oneself unambiguously within a binary gender category, NBGQ individuals will be forced to deny pluralistic, non-binary gender experiences (Nieder et al, unpublished data 2017). In general, health care professionals should meet the requirements of the WPATH's SoC7[2] and make professional and individual health care accessible to NBGQ individuals. Specifically, they should not rely on preconceptions of a hypothetical "transsexual biography," in which all trans individuals want to live as the opposite sex and intend to receive all existing medical treatments accordingly. Likewise, it is problematic if a form of NBGQ gender is interpreted as a result of pathology or simply a lifestyle, although it reflects an integrative identity formation. Otherwise, the life-sustaining necessity of a NBGQ gender might be devalued and the opportunities that lie within could be underestimated (eg, having fewer surgeries applied because of the individual's ability to live with ambiguous sex characteristics). Therefore, health care professionals should become informed about NBGQ genders and expressions to appreciate the range of genders viewed as healthy and normative.[27] They should critically reflect on their own normative assumptions about sex and gender, address their own insecurities concerning THC for NBGQ individuals, acknowledge NBGQ genders rather than question the stability of a NBGQ gender or the fluidity of genders generally, and use appropriate training (eg, user-led participatory workshops[27]). Taking NBGQ genders seriously opens up the opportunity to learn about the numerous individual reasons for modifying primary and/or secondary sex characteristics.

Moreover, within an integrative identity formation process, it is necessary to allow for the possibility to express gender ambiguity in public and private contexts. However, with regard to distress and quality of life, self-determination of NBGQ people is limited by societies that are built on the binary gender, mainly because of the application of sex as a deciding category in numerous procedures. Ensuring the inner and outer strength necessary for living and coping with those restrictions is considered one of the major tasks to be focused on in NBGQ-related health care.[5] To meet the unique health care needs of NBGQ trans individuals,[14,18] this should apply to health care professionals in psychological[27] and somatic practice.[28] However, for outcome, THC for NBGQ people will have to prove its evidence the same way as it has been proved for binary trans people.[33]

Limitations

The present data were collected in a non-clinical online sample and therefore differ from clinic samples used in most studies on THC. The study was made inclusive for non-patients and individuals who decided against THC for various reasons (eg, methodologic[12]). With this method, we prevented bias from a participant-patient double role, which is the reason the results might possess a higher level of validity than those provided by clinical studies. However, the 2 sampling methods have certain biases, some of which have not been sufficiently recognized in trans-related research thus far (eg, over-representation of participants from urban environments[35]). Moreover, the anonymity of an online survey makes it impossible to determine whether NBGQ individuals live according to their NBGQ gender in their everyday life. The present study did not collect data on mental health, because it was not the study's focus. However, (mental) health outcomes are crucial to evaluate THC and to prove its long-term evidence. Further research is needed to address these important aspects. Future research covering NBGQ issues is crucial, because existing research (especially within health care) has focused primarily on a binary understanding of gender and therefore has failed to map health-related needs of NBGQ individuals.

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SUPPLEMENTARY DATA

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