

Characterizing Sociodemographic, Behavioral Correlates, and Trends in Reported Gender Identity Among Non-binary/genderqueer Patients at Public Health – Seattle and King County Sexual Health Clinic

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Abstract

Characterizing Sociodemographic and Behavioral Correlates and Trends in Reported Gender Identity Among Non-binary/genderqueer Patients at Public Health – Seattle and King County Sexual Health Clinic

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Background: Non-binary/genderqueer (NB/GQ) individuals are a distinct but understudied population within the LGBTQ+ community. We sought to characterize sociodemographic behaviors and STI outcomes for NB/GQ patients attending the Sexual Health Clinic (SHC) and examine how gender identity among SHC patients has evolved over time.

Methods: We used Public Health Seattle-King County (PHSKC) SHC data from 2016-2023 to examine temporal changes in gender identity. We compared sociodemographic characteristics among cisgender (men and women), transgender, and NB/GQ patients using chi-squared tests to determine statistical significance. We used generalized estimating equations to compare the prevalence of syphilis, urogenital gonorrhea, rectal chlamydia, methamphetamine use, and non-prescribed injection drug use in NB/GQ patients to that in both cisgender men who have sex with men (MSM) and transgender patients.

Results: Of 82,384 visits between 2016-2023, 1672 (2.0%), 867 (1.1%), and 79,845 (96.9%) were among NB/GQ, transgender, and cisgender patients, respectively. The proportion of visits among NB/GQ and transgender patients increased over time, from 0.7% to 3.5% and 0.7% to 1.7%, respectively (p-trend<0.001). NB/GQ identity was more frequent among patients assigned female vs. male sex at birth (3.2% vs 1.8%, P<0.001), younger vs older patients (14-25 years: 3.1% vs 46+: 0.2%, p<0.001), and patients reporting White (2.3%) vs Black (1.0%) race (p<0.001). We found no significant differences in injectable drug and methamphetamine use across NB/GQ, cisgender MSM, and transgender patients. In models adjusted for age, sex assigned at birth, race, ethnicity, insurance, and housing status, we observed a marginally lower prevalence of syphilis among NB/GQ patients compared to cisgender MSM, with an adjusted prevalence ratio (aPR) of 0.98 (95% CI: 0.97-0.99). Additionally, we observed a lower prevalence of rectal chlamydia infection and urogenital gonorrhea infection among NB/GQ patients compared to cisgender MSM. For rectal chlamydia, the aPR was 0.40 (95% CI: 0.19, 0.82), and for urogenital gonorrhea, the aPR was 0.35 (95% CI: 0.16, 0.77). STI outcomes did not differ between NB/GQ and transgender patients.

Conclusion: Given the rapidly increasing gender diversity among clinic attendees, our findings indicate that NB/GQ patients exhibited a lower prevalence of bacterial STIs, such as syphilis, rectal chlamydia, and urogenital gonorrhea, compared to cisgender MSM. This underscores the need for continued monitoring of behaviors and STI outcomes in distinct gender-diverse groups. Such data is imperative to tailor STI and HIV prevention strategies appropriately.

Introduction:

In the United States, evolving gender identities have brought attention to Non-binary/genderqueer¹ (NB/GQ) individuals—a notable yet under-examined segment within the LGBTQ+ population (1). Recent research by the Williams Institute indicates that approximately 11% of LGBTQ adults identify as NB/GQ, highlighting a significant component of the population that could greatly benefit from targeted health interventions (2). These individuals do not align exclusively with traditional male or female gender categories, reflecting a diverse array of identities, including queer, bisexual, pansexual, and asexual orientations (3). As societal awareness and recognition of various gender identities have expanded, there is a pressing need to adapt public health policies to accurately reflect the diverse needs of each group. This is particularly critical as NB/GQ individuals face unique challenges, such as heightened economic instability, where a significant number struggle with not having enough money to meet daily needs, and pronounced health disparities, including higher instances of depression and anxiety (2). Furthermore, there is a notable gap in accessing mental health services, exacerbating these issues.

NB/GQ individuals often are not adequately served by current healthcare practices, representing a varied group with diverse needs. These individuals frequently encounter obstacles in accessing healthcare that respects their gender identity, which can result in them navigating the system in ways that do not fully reflect their identities, such as using the Trans label to gain access to necessary services. This misalignment can lead to care that is not fully sensitive to their specific healthcare needs, as demonstrated in the study by Lykens et al., where participants felt misunderstood by providers who approached them from a binary transgender perspective, often leading to inappropriate or insufficient care (4).

¹ Individuals choosing this identity do not align exclusively with traditional male or female categories, encompassing a broad range of gender experiences beyond the binary.

Healthcare experiences improve when providers use inclusive language and demonstrate knowledge of transgender and gender non-binary (TGNB) health issues. Creating non-stigmatizing spaces where gender identity can be disclosed is also crucial. Conversely, negative experiences often stem from misgendering – incorrectly using language or pronouns that do not align with a person’s gender identity – lack of provider familiarity with TGNB health issues and transphobic practices (5). NB/GQ individuals typically have different demographic characteristics than binary transgender individuals and seek more diverse gender-affirming treatments; these unique needs are not often fully addressed by current healthcare practices (6).

These specific challenges underscore the need for targeted healthcare interventions and robust support systems within healthcare settings to adequately address and support the well-being of NB/GQ populations (2). Given the increased risks for sexually transmitted infections (STI) and human immunodeficiency virus (HIV) within the broader transgender community and the limited data on STI/HIV risk factors specifically for NB/GQ people, dedicated research to explore this gap is needed. Understanding the distinct STI/HIV risk profiles of various gender identities is crucial for providing targeted medical care and developing effective public health policies to prevent the spread of these infections.

Notably, HIV and STI prevention policies and recommendations are often guided by the sex of sexual partners and gender identity, where transgender and NB/GQ individuals are frequently aggregated, potentially obscuring unique health or prevention needs. Thus, we sought to identify the sociodemographic characteristics, behaviors, and STI outcomes of NB/GQ individuals, separately from transgender individuals, who visited the Public Health—Seattle and King County (PHSKC) Sexual Health Clinic (SHC) from 2016 to 2023. We also examine how gender identity has changed among SHC patients over time.

Methods:

We conducted a retrospective observational study using data routinely collected at the PHSKC SHC from 2016 to 2023. The study included individuals aged 14 years and above, totaling 82,324 visits to the PHSKC SHC during the study period. We excluded records if they were outside the specified timeframe or if gender identities were reported in categories such as Two Spirit, Questioning, Choose Not to Disclose, and Another gender identity (Other). Specifically, the numbers of excluded records were as follows: Choose Not to Disclose=81, Not Listed/Other=33, Other/Unknown=12, Questioning=1, and Two Spirit=6.

Data collection was performed via 1) self-report at waiting room computer questionnaire kiosks and 2) electronic medical record (EMR) data entered by providers. The collected data encompassed sociodemographic characteristics, sexual behaviors, diagnoses, and laboratory results. The primary exposure variable for comparisons of sociodemographic characteristics was gender identity, categorized into NB/GQ, transgender, and cisgender (males and females), based on combined data from patients and providers, prioritizing patient-reported data whenever available. Subsequent analyses of behavioral and STI outcomes focused specifically on cisgender men who have sex with men (MSM) within the referent cisgender category, incorporating both self-reported prior history of STIs and incident infections diagnosed at the time the kiosk data were collected. Other variables included age (14-25, 26-35, 36-45, 46 & older), race (White, Asian, Black, Multiracial, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and Another race), ethnicity (Non-Hispanic/Latinx, Hispanic/Latinx, and Another ethnicity), insurance status (Uninsured and Insured), sex assigned at birth (Male and Female), and housing stability (Not Homeless and Homeless).

All analyses were conducted using R version 4.2.3 (R Foundation for Statistical Computing, 2023). We applied the Cochran-Armitage trend test to assess trends in the proportions of each reported gender identity among SHC attendees over time. We used Chi-squared tests to determine the statistical significance of differences in sociodemographic

characteristics across gender identities. We used logistic regression with generalized estimating equations (GEE) to investigate differences in sexual behavior and STI outcomes and account for multiple records from the same individual. We compared NB/GQ to both transgender and cisgender MSM patients. We used a forward stepwise regression process to determine significant predictors for inclusion in the multivariate models. For each outcome (e.g., methamphetamine use), we built a model incrementally by adding covariates one by one based on their significance in univariable analyses, using a p-value threshold of less than 0.05 to determine statistical significance. The final model adjusted for significant covariates, which included age, race, ethnicity, insurance status, housing stability, and sex assigned at birth.

This study received approval from the University of Washington Institutional Review Board IRB ID: STUDY00018361, which ensures adherence to ethical standards and practices in research.

Results:

From 2016 to 2023, there were 82,384 clinic visits by individuals who identified as cisgender, NB/GQ, and transgender. NB/GQ individuals accounted for a growing proportion of patients over time, increasing from 0.74% (n=70) in 2016 to 3.47% (n=351) in 2023, while transgender patient visits rose from 0.69% (n=66) to 1.65% (n=167) over the same period (p-trend<0.001, Table 1).

Gender identity varied significantly with sex assigned at birth, age, and race. NB/GQ identity was more prevalent among patients assigned female at birth (3.2%, n=416) compared to those assigned male (1.8%, n=1256, P<0.001, Table 2). Youth and young adults (14-25 years) represented the highest proportion of NB/GQ individuals at (3.1%, n=383), in contrast to those 46 years and older, of whom only 0.2% (n=35) identified as NB/GQ (p<0.001). Racial disparities were also evident, with the largest proportion of persons identifying as NB/GQ being American Indian/Alaska Native patients (4.6%, n=43), followed by Native Hawaiian or Pacific Islander

patients (2.7%, n=50). White patients had the third largest proportion identifying as NB/GQ (2.3%, n=1041). The smallest proportion identifying as NB/GQ were Black patients (1.0%, n=130, $p < 0.001$). A larger proportion of Hispanic/Latinx patients identified as NB/GQ (2.4%, n=252) and transgender (0.9%, n=99) compared to other categories (non-Hispanic/Latinx and Another ethnicity).

Housing stability was significantly different among the groups. A larger proportion of those not experiencing homelessness identified as NB/GQ (2.1%, n=1597) and transgender (1.1%, n=834) compared to patients who reported experiencing homelessness (1.5%, n=71 for NB/GQ and 0.7%, n=33 for transgender individuals).

Among uninsured and/or self-paying patients, NB/GQ patients represented 1.5% (n=390), and transgender patients constituted 0.8% (n=201), with the vast majority being cisgender individuals at 97.8% (n=26088). Conversely, within the insured group, NB/GQ individuals accounted for 2.3% (n=1278) and transgender individuals for 1.2% (n=666), with cisgender patients making up 96.5% (n=53724) ($p < 0.001$).

In models adjusted for age, sex assigned at birth, race, ethnicity, insurance, and housing status, we observed no significant differences in the prevalence of methamphetamine use and non-prescribed injection drug use comparing NB/GQ with cisgender MSM and transgender patients (Table 4). However, we observed a marginally lower prevalence of syphilis among NB/GQ patients compared to cisgender MSM, with an adjusted prevalence ratio (aPR) of 0.98 (95% CI: 0.97-0.99). Additionally, we observed a lower prevalence of rectal chlamydia infection (aPR: 0.40, 95% CI: 0.19, 0.82) and urogenital gonorrhea infection (aPR: 0.35, 95% CI: 0.16, 0.77) among NB/GQ patients compared to MSM. STI outcomes did not otherwise differ significantly between NB/GQ and transgender patients.

Discussion:

This study highlights a notable increase in the reported proportions of NB/GQ and transgender individuals utilizing sexual health services in our county, which may reflect a broader societal shift toward disclosure, recognition, and acceptance of diverse gender identities rather than a definite increase in the actual numbers of these populations. We observed significant demographic differences, particularly with higher proportions of younger populations and that assigned female at birth identifying as NB/GQ. We also observed significant differences in the prevalence of the STIs examined, although STI prevalence was similar in NB/GQ and transgender patients, NB/GQ individuals had a lower prevalence of rectal chlamydia and urogenital gonorrhea than cisgender MSM. Our analysis also included key social determinants such as housing stability and insurance status, revealing how these factors, health behaviors, and systemic barriers significantly impact the health outcomes of gender-diverse populations. These findings underscore how the complex interplay of demographic factors, health behaviors, and systemic barriers can impact the health outcomes of gender-diverse populations.

The increase in NB/GQ and transgender representation among clinic visitors could indicate not only a rise in the number of gender-diverse individuals seeking health services but also enhanced comfort in disclosing their identities. This may also reflect an improving climate of acceptance, encouraging more individuals to seek services aligned with their gender identity. The increasing prevalence of NB/GQ identity among younger populations, particularly those assigned female at birth, is consistent with current literature that suggests younger generations are increasingly rejecting traditional binary gender classifications (7). The Trevor Project reports that a higher percentage of survey respondents who were assigned female at birth (AFAB) identify as NB/GQ compared to those assigned male at birth (AMAB). Specifically, 28% of AFAB respondents identified as NB/GQ, a significant contrast to the 17% of AMAB respondents who identified as such (8). This disparity underscores the significant influence of sex assigned at birth on the identification as NB/GQ and highlights the importance of youth-centered healthcare

services that are adaptable to these evolving gender identities. Furthermore, the need for inclusive and affirming healthcare services across all life stages will grow as these individuals age. This requires expanding services beyond youth-centric models to provide comprehensive care throughout an individual's lifespan.

We also observed racial disparities in gender identity representation, which raise complex questions about the intersectionality of race, gender, and healthcare. The disproportionately higher representation of NB/GQ identity among American Indian/Alaska Native and Native Hawaiian or Pacific Islander individuals may reflect cultural differences in gender identity conceptualization and acceptance. Similarly, the comparatively higher proportion of Latinx patients identifying as NB/GQ and transgender could suggest distinct cultural factors or differing levels of access to gender-affirming care. Varying degrees of societal acceptance, structural discrimination, and disparities in healthcare access may also influence these patterns. Prior research has highlighted the unique challenges faced by racial and ethnic minority transgender and nonbinary individuals in accessing healthcare and societal acceptance (9). Further investigation is warranted to understand how intersectional factors impact gender identity representation across different racial groups. Understanding these nuances will help inform culturally competent healthcare practices and policies that address the unique needs of these populations.

We found a larger representation of NB/GQ and transgender patients among housed vs. unhoused patients. This is at odds with findings from the Institute for Sexual and Gender Minority Health and Wellbeing during the COVID-19 pandemic, which demonstrated that transgender and gender-diverse individuals face significantly higher odds of housing instability than cisgender individuals (10).

It is unclear why our results for Seattle area SHC patients differ from those of this national survey. Despite our findings that NB/GQ and transgender SHC patients are overrepresented among housed patients, a substantial proportion of NB/GQ (4.3%) and transgender patients

(3.8%) were unhoused, revealing economic vulnerabilities in these groups that are largely made up of young people. While our study highlighted a relative consistency in drug use across NB/GQ, transgender, and cisgender MSM groups, indicating some parity in substance use behaviors, the variations in STI outcomes, particularly the lower prevalence of rectal chlamydia and urogenital gonorrhea among NB/GQ compared to cisgender MSM, emphasize distinct differences in exposure or protective behaviors. These differences in STI rates may reflect unique aspects of sexual networks or health practices within these communities. Understanding these distinctions is crucial for developing tailored public health strategies that effectively address the diverse needs of each subgroup within the gender-diverse population. This approach will enhance our ability to mitigate health disparities and improve overall health outcomes for these communities.

This retrospective study had several limitations. First, it relies on pre-existing data, which may be incomplete or inaccurately recorded, introducing potential biases. Social desirability bias may affect the reporting of behaviors participants might be reluctant to disclose to a clinician, such as non-prescribed injectable drug use or methamphetamine use. Second, the study's use of English-language data in the kiosk component may not accurately capture NB/GQ individuals who do not speak the language, relying instead on clinician-recorded gender identity, which might not reflect patients' self-identification. Third, the findings drawn from this sexual health clinic's data may not fully represent the broader NB/GQ population. We excluded gender identities reported as Two Spirit, Questioning, and patients who chose not to disclose their gender identity due to their small numbers, limiting the statistical analysis, and individuals who did not disclose their gender identity, as gender was the primary variable of interest. These exclusions prevent our findings from being extrapolated to these groups. Moreover, lumping diverse identities such as queer, bisexual, pansexual, and asexual under the NB/GQ category may obscure subgroup differences, potentially influencing outcomes like STI prevalence. For instance, fewer sexual exposures among asexual individuals might contribute to the lower observed prevalence of bacterial STIs in the NB/GQ group.

Our study boasts several strengths, including using a large dataset encompassing 82,384 visits over a nine-year period, which provided robust statistical power and allowed for the analysis of longitudinal trends in gender identity among clinic attendees. The SHC's unique practice of distinctly categorizing NB/GQ identities from other gender categories enabled more precise analyses of this often-under-examined group. Furthermore, the setting of a specialized sexual health clinic, known for its inclusive care of LGBTQ+ populations, likely enhanced the accuracy and reliability of the data collected.

In conclusion, our study documents an increase in gender diversity among SHC patients. It reveals a lower prevalence of rectal chlamydia and urogenital gonorrhea in NB/GQ patients compared to cisgender MSM. No differences were observed in STI or substance use outcomes between NB/GQ and transgender patients; however, our research was limited to a select range of STIs and did not extensively cover drug use behaviors. Future research should broaden to include additional STIs such as HPV, Hepatitis B, and C, and oral infections. It should deepen the analysis of drug use patterns, sexual practices, and their interaction with mental health. It is also crucial to assess the impact of PrEP on STI rates and to explore barriers to treatment access. Enhanced understanding of these factors through longitudinal and qualitative studies will inform the development of more inclusive healthcare policies and targeted interventions, improving health equity for gender-diverse populations. These studies should incorporate intersectional factors, utilize biological markers, and consider technological interventions to provide comprehensive insights into the unique health needs of NB/GQ and transgender individuals.

Tables:

Table 1: Trends in Gender Identity Representation at the Public Health - Seattle and King County Sexual Health Clinic 2016 to 2023. ‡

Year	Total Patients (N)	Non-Binary/Genderqueer Patients N (%)	Cisgender Patients N (%)	Transgender Patients N (%)	P-value ¥
2016	9509	70 (0.74)	9373 (98.57)	66 (0.69)	<0.001
2017	10766	144 (1.34)	10565 (98.13)	57 (0.53)	
2018	11425	178 (1.56)	11162 (97.70)	85 (0.74)	
2019	11477	197 (1.72)	11177 (97.39)	103 (0.90)	
2020	7853	136 (1.73)	7623 (97.07)	94 (1.20)	
2021	9368	236 (2.52)	9002 (96.09)	130 (1.39)	
2022	11875	360 (3.03)	11350 (95.58)	165 (1.39)	
2023	10111	351 (3.47)	9593 (94.88)	167 (1.65)	

‡: Table 1 excludes records of patients whose gender identities were categorized as Two Spirit, Questioning, or Choose Not to Disclose.

¥: P-value obtained using the Cochran-Armitage trend test.

Table 2: Sociodemographic Characteristics of Patients at the Public Health - Seattle and King County Sexual Health Clinic 2016 to 2023

Characteristic	Total N	Gender Identity			p-value
		Non-Binary/ Genderqueer Patient N (%)	Transgender Patients N (%)	Cisgender Patients N (%)	
Sex Assigned at Birth					<0.001
Male	69542	1256 (1.8)	604 (0.9)	67682 (97.3)	
Female	12842	416 (3.2)	263 (2.0)	12163 (94.7)	
Age (Years)					<0.001
14-25	12318	383 (3.1)	215 (1.75)	11810 (95.9)	
26-35	36671	1008 (2.7)	424 (1.2)	35239 (96.2)	
36-45	18188	246 (1.4)	171 (0.9)	17771 (97.7)	
46 & older	15117	35 (0.2)	57 (0.4)	15025 (99.4)	
Sexual Orientation					<0.001
Gay	26496	240 (0.9)	83 (0.3)	26173 (98.8)	
Straight/Heterosexual	21222	9 (0.04)	121 (0.6)	21092 (99.4)	
Bisexual	6052	103 (1.7)	82 (1.4)	5867 (96.9)	
Queer	2398	721 (30.0)	192 (8.0)	1485 (60.8)	
Lesbian	151	9 (6.0)	27 (17.9)	115 (76.2)	
Pansexual	1180	186 (15.8)	54 (4.6)	940 (79.7)	
Race					<0.001
White	45951	1041 (2.3)	449 (1.0)	44461 (96.8)	
Asian	8232	109 (1.3)	124 (1.5)	7999 (97.2)	
Black	12875	130 (1.0)	131 (1.0)	12614 (98.0)	
Multiracial	1887	43 (2.3)	37 (2.0)	1807 (95.8)	
American Indian/Alaska Native	940	43 (4.6)	4 (0.4)	893 (95.0)	
Native Hawaiian or Pacific Islander	1846	50 (2.7)	23 (1.2)	1773 (96.0)	
Others	10620	252 (2.4)	99 (0.9)	10269 (96.7)	
Ethnicity					<0.001
Non-Hispanic/Latinx	64996	1306 (2.0)	666 (1.0)	63024 (97.0)	
Hispanic/Latinx	12821	295 (2.3)	181 (1.4)	12345 (96.3)	
Others	4530	67 (1.5)	20 (0.4)	4443 (98.1)	
Housing instabilities/Homelessness					0.01
Not homelessness	77609	1597 (2.1)	834 (1.1)	75178 (96.9)	
Homeless or unstably housed	4738	71 (1.5)	33 (0.7)	4634 (97.8)	
Insurance Status					<0.001
Uninsured/Self-pay	26679	390 (1.5)	201 (0.8)	26088 (97.8)	
Insured	55668	1278 (2.3)	666 (1.2)	53724 (96.5)	

Table 3: HIV Risk Factors and STI Outcomes by Gender Identity

STI outcomes	Number of Patient visits, including reports of substance use and outcomes by Gender Identity Group, Public Health - Seattle & King County Sexual Health Clinic		
	NB/GQ N=59 N (%)	Transgender N=36 N (%)	Cisgender MSM N=8342 N (%)
Non-prescribed injectable Drug Use	12 (20.3)	8 (22.2)	1119 (13.4)
Methamphetamine Use	29 (49.2)	15 (41.7)	2569 (30.8)
Rectal Chlamydia Infection	9 (15.3)	7 (19.4)	2412 (28.9)
Urogenital Gonorrhea Diagnosis	7 (11.9)	5 (13.9)	1160 (13.9)
Syphilis Diagnosis	2 (3.4)	1 (2.8)	1084 (13.0)

Table 4: Comparison of STI outcomes Among Non-Binary/Genderqueer Compared with Transgender People vs Cisgender MSM at the Public Health - Seattle and King County Sexual Health Clinic, 2016 to 2023

Risk Factors Related to STI/HIV	Comparison	Unadjusted Model	Multivariate Model#
		PR (95% CI)	PR (95%CI)
Non-prescribed injectable Drug Use	NB/GQ vs MSM (Ref.)	0.76 (0.45, 1.27)	0.68 (0.38, 1.19)
	NB/GQ vs Transgender (Ref.)	0.76 (0.35, 1.63)	0.72 (0.23, 2.19)
Methamphetamine Use	NB/GQ vs MSM (Ref.)	0.78 (0.47, 1.29)	0.70 (0.39, 1.24)
	NB/GQ vs Transgender (Ref.)	0.86 (0.36, 2.05)	0.79 (0.27, 2.31)
Rectal Chlamydia Infection	NB/GQ vs MSM (Ref.)	0.29 (0.14, 0.60)	0.40 (0.19, 0.82)
	NB/GQ vs Transgender (Ref.)	0.49 (0.15, 1.65)	0.56 (0.17, 1.93)
Urogenital Gonorrhea Diagnosis	NB/GQ vs MSM (Ref.)	0.30 (0.15, 0.61)	0.35 (0.16, 0.77)
	NB/GQ vs Transgender (Ref.)	0.66 (0.18, 2.42)	0.69 (0.17, 2.77)
Syphilis Diagnosis	NB/GQ vs MSM (Ref.)	0.14 (0.04, 0.55)	0.98 (0.98, 0.99)
	NB/GQ vs Transgender (Ref.)	0.83 (0.09, 7.95)	1.00 (0.99, 1.01)

#: Multivariate models are adjusted for age, race, ethnicity, insurance status, housing stability, and sex assigned at birth, using a forward stepwise regression process with a p-value threshold of <0.05 for inclusion

References

1. thisisloyal.com L]. Williams Institute. [cited 2024 Feb 23]. Nonbinary LGBTQ Adults in the United States. Available from: <https://williamsinstitute.law.ucla.edu/publications/nonbinary-lgbtq-adults-us/>
2. Nonbinary-LGBTQ-Adults-Jun-2021.pdf [Internet]. [cited 2024 Apr 22]. Available from: <https://williamsinstitute.law.ucla.edu/wp-content/uploads/Nonbinary-LGBTQ-Adults-Jun-2021.pdf>
3. Richards C, Bouman WP, Seal L, Barker MJ, Nieder TO, T'Sjoen G. Non-binary or genderqueer genders. *International Review of Psychiatry*. 2016 Jan 2;28(1):95–102.
4. Lykens JE, LeBlanc AJ, Bockting WO. Healthcare Experiences Among Young Adults Who Identify as Genderqueer or Nonbinary. *LGBT Health*. 2018 Apr 1;5(3):191–6.
5. Baldwin A, Dodge B, Schick VR, Light B, Schnarrs PW, Herbenick D, et al. Transgender and Genderqueer Individuals' Experiences with Health Care Providers: What's Working, What's Not, and Where Do We Go from Here? *Journal of Health Care for the Poor and Underserved*. 2018;29(4):1300–18.
6. Reisner SL, Hughto JMW. Comparing the health of non-binary and binary transgender adults in a statewide non-probability sample. *PLOS ONE*. 2019 Aug 27;14(8):e0221583.
7. Beyond Binary: How Gen Z is redefining gender – Giraffe [Internet]. [cited 2024 Apr 9]. Available from: <https://giraffeinsights.co.uk/2022/01/24/beyond-binary-how-gen-z-is-redefining-gender/>
8. The Trevor Project [Internet]. 2021 [cited 2024 Apr 25]. Nonbinary Gender Identity Statistics Among Youth. Available from: <https://www.thetrevorproject.org/research-briefs/diversity-of-nonbinary-youth/>
9. USTS-Full-Report-Dec17.pdf [Internet]. [cited 2024 Feb 23]. Available from: <https://transequality.org/sites/default/files/docs/usts/USTS-Full-Report-Dec17.pdf>
10. Felt D, Xu J, Floresca YB, Fernandez ES, Korpak AK, Phillips G, et al. Instability in Housing and Medical Care Access: The Inequitable Impacts of the COVID-19 Pandemic on U.S. Transgender Populations. *Transgend Health*. 2023 Feb 8;8(1):74–83.