



Short communication

The association between gender identity fluidity and health outcomes in transgender and gender diverse people in New Orleans and Los Angeles, USA

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ABSTRACT

Objectives: Most studies with transgender and gender diverse people (TGD) examine gender identity cross-sectionally. Gender identity and expression can fluctuate over time, which may have implications for health. The goal of our study was to compare mental health, substance use and healthcare utilization among 163 gender identity fluid (1 + identity change) and gender identity consistent (no change) TGD.

Methods: Participants were recruited in New Orleans, LA and Los Angeles, CA and assessed at four-month intervals over 24 months between 2017 and 2021. We conducted logistic regression models to test for associations between gender identity fluidity and health outcomes at 24 months. In post hoc analyses, we explore how controlling for cross-sectional report of gender identity at 24 months may impact the association between gender identity fluidity and health outcomes.

Results: We saw no significant differences across mental health and substance use indicators. Gender identity fluid participants had 5.9 times the adjusted odds (95 % Confidence Interval (CI): 1.9–18.4) of no recent healthcare visit compared to gender identity consistent participants. After controlling for cross-sectional report of gender identity, the association between gender identity fluidity and no recent healthcare visit remained significant (aOR = 4.6; 95 % CI: 1.4–14.8).

Conclusions: Because providers have limited experience providing gender-affirming care or treating patients with fluid gender identities, gender identity fluid patients may avoid healthcare more than gender identity consistent patients. Our preliminary study highlights the need to measure gender identity longitudinally and examine the relationship between gender identity fluidity and health.

1. Introduction

Transgender and gender diverse people (TGD) face considerable stigmatization and marginalization that contribute to poor health. (National Academies of Sciences, 2020) Studies have documented health inequities across mental and physical health outcomes when comparing TGD to non-TGD people. (National Academies of Sciences, 2020; Pattison et al., 2021) In recent years, there has been a growing recognition in research and public health practice that gender identity is not a binary construct and non-binary TGD may have unique experiences and health challenges relative to their binary TGD counterparts. (National Academies of Sciences, Engineering, and Medicine, 2020).

Many studies comparing binary TGD and non-binary TGD report significant differences in health outcomes, including: depression, (Thorne et al., 2019; Newcomb et al., 2020) anxiety, (Thorne et al., 2019) suicidal ideation, (Newcomb et al., 2020) and addictions. (Ruppert et al., 2021) Furthermore, non-binary TGD patients have different gender-affirming treatment needs relative to their binary TGD counterparts and report that providers are insufficiently equipped to treat non-binary TGD patients due to unfamiliarity with identities outside the gender binary. (Lykens et al., 2018) Notably, these studies, and a vast majority of studies with TGD populations, define gender identity cross-sectionally. Though gender fluid is an identity in and of itself, this fixed approach directly counters the notion that gender identity and

Abbreviations: TGD, transgender and gender diverse.

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expression can fluctuate situationally and over time with no particular end point.

A number of qualitative studies have explored gender fluidity. In a study of 15 binary and non-binary TGD adults, participants described gender identity selection more commonly as an iterative, rather than linear process as they navigated identity formation. (Fiani and Han, 2019) Similarly, Galupo et al (Galupo et al., 2017) interviewed 197 TGD adults and fluidity emerged in interviews as both a self-ascribed identity and as a process, in which participants stated they felt “some days male, some days female” and “like a constantly flowing river.”

More recently, researchers have also begun to examine gender identity fluidity, that is self-reported changes in gender identity, using quantitative data. A 2023 study found that in a sample of TGD adolescents (83.6 % white), 29 % changed their gender identity at least once over a 1.5-year period. (Katz-Wise et al., 2023) A similar study in an ethnographically diverse sample of 225 adolescents and young adults (34 % non-Latinx Black, 38 % Latinx), 77 % changed their identity at least once during the two-year study period, and 17 % at least twice. (Ocasio et al., 2024) This may suggest that gender identity fluidity exists across ethnographic identities and throughout the life course. Despite the preponderance of gender identity fluidity, few studies examine how this fluidity impacts physical and mental health outcomes among TGD people.

Similar to studies comparing non-binary TGD and binary TGD, the few available studies focused on gender identity fluidity and health report mixed results. For instance, a recent study using a nationally representative sample of adolescents and adults from the 2014–2018 Population Assessment of Tobacco and Health in the US reported a higher prevalence of past 30-day tobacco use among gender identity fluid participants than those who were gender identity consistent. (Kcomt et al., 2022) There were no differences in tobacco use between transgender-consistent and cisgender-consistent participants. On the other hand, a study of a community sample of 78 TGD young people ages 15–21 years old reported no significant difference in depressive symptoms between gender identity fluid and gender identity consistent participants. (Real et al., 2023) Elucidating the impact that gender identity fluidity may have on health and mental health outcomes, particularly during the critically important developmental period of adolescence and young adulthood, merits further investigation.

We were interested in examining whether disparities observed among binary TGD and non-binary TGD also exist among gender identity fluid and gender identity consistent TGD. In this short communication, we compare mental health, substance use and healthcare utilization among gender identity fluid and gender identity consistent TGD who participated in a large HIV prevention and treatment study. In addition, we conducted post hoc analyses to explore how controlling for self-reported gender identity may impact the association between gender identity fluidity and outcomes.

2. Methods

2.1. Participants and Procedures

The parent study recruited 1,727 adolescents and young adults 12–24 years of age from community and internet venues in New Orleans, LA and Los Angeles, CA. (Swendeman et al., 2019) Data were collected between 2017 and 2021. Participants reported their gender identity as part of assessments conducted every 4 months for 24 months. This cross-sectional secondary data study focuses on the 163 participants who selected at least once across all time points any TGD identity label or binary gender (eg, man) that did not correspond to their sex assigned at birth (eg, female). Response options for sex assigned at birth were binary (male, female). Gender identity response options were: genderqueer, gender nonconforming, female/woman, male/man, nonbinary, transgender female/woman, transgender male/man, two-spirit, and write-in option). We excluded participants who provided fewer than three time points of data.

The University of California Los Angeles and Tulane University Institutional Review Boards approved the study. Trained interviewers obtained written informed consent from all participants before enrollment. We received a waiver of informed consent for minors.

2.2. Measures

We classified participants as either gender identity fluid (1 + change in gender identity) or gender identity consistent (no change in gender identity). For mental health, we used the Patient Health Questionnaire-9 (PHQ-9) for moderate depression (10 or higher), (Kroenke et al., 2001) General Anxiety Disorder-7 (GAD-7) for generalized anxiety (8 or higher), (Kroenke et al., 2007) and lifetime suicide attempt. We examined past 4-month binge drinking (5 + drinks on one occasion), (Bush et al., 1998) and any past 4-month cigarette, marijuana, drug (1 + illicit drug excluding marijuana), and polydrug (2 + illicit drugs excluding marijuana) use. For healthcare utilization, we examined whether participants had a current healthcare provider and received care from a doctor’s office, clinic or wellness center in the last 4 months (recent healthcare visit).

2.3. Statistical analysis

We used descriptive statistics to characterize the sample by age, sex assigned at birth, ethnographic identity, and study site. For primary analyses, we conducted unadjusted and adjusted logistic regression models to test for associations between gender identity fluidity and mental health, substance use and healthcare utilization at 24 months. Adjusted models controlled for age, sex assigned at birth, ethnographic identity, and study site. We used the Benjamini-Hochberg procedure to control for the false discovery rate. (Benjamini and Hochberg, 1995).

To provide additional insights into the associations between a cross-sectional measure of gender identity, gender identity fluidity, and health outcomes, we conducted post hoc analyses using participants’ self-defined gender identity at the 24-month time point. We classified participants as cisgender, binary TGD (e.g., transwoman) or non-binary TGD (e.g., gender nonconforming) based on responses to gender identity and sex assigned at birth questions. We excluded participants who identified as cisgender (sex assigned at birth corresponds to gender identity) at baseline to avoid having 0 participants categorized as gender identity consistent. This reduced our sample size from 163 participants in the primary analyses to 128 participants in post hoc analyses.

We conducted adjusted logistic regression models to examine the association between: 1) gender identity at 24-months and the health outcomes used in primary analyses excluding gender identity fluidity; 2) gender identity fluidity and health outcomes when gender identity at 24 months is included.

Missing data were handled using listwise deletion. Data missingness did not exceed 1.2 % on any analysis. All analyses were conducted using IBM SPSS Version 28.

3. Results

Table 1 shows participant characteristics. A majority of the sample was gender identity fluidity (79 %), assigned male at birth (69 %), Latinx (41 %), and from Los Angeles (70 %). At baseline, 22 % were cisgender and 26 % non-binary TGD. In the gender identity consistent group, 74 % were binary TGD. There were no significant differences between gender identity fluidity and gender identity consistent participants across sociodemographic characteristics. Thirty-four percent met criteria for moderate depression, 42 % for generalized anxiety, and 56 % reported having attempted suicide in their lifetime (Table 2). We saw no significant differences in models across mental health and substance use indicators. However, gender identity fluid participants had 5.9 times the adjusted odds (95 % Confidence Interval (CI): 1.9–18.4) of no recent healthcare visit.

Table 1
Sociodemographic characteristics of gender identity fluid and gender identity consistent participants in New Orleans and Los Angeles, USA, 2017–2021 (n = 163).

	Total	Gender Identity Consistent		Gender Identity Fluid		P-value
	n (%)	n	%	n	%	
Baseline Age (mean, SD)	163 (100)	35	20.7 (2.2)	128	21.2 (2.1)	0.21
Sex Assigned at Birth						0.601
Male	113 (69.3)	23	65.7	90	70.3	
Female	50 (30.7)	12	34.3	38	29.7	
Ethnoracial Identity						0.413
Black/African American	56 (34.4)	9	25.7	47	36.7	
Latinx	67 (41.1)	14	40.0	53	41.4	
White	25 (15.3)	7	20.0	18	14.1	
Other ^a	15 (9.2)	5	14.3	10	7.8	
Site						0.838
New Orleans	49 (30.1)	11	31.4	38	29.7	
Los Angeles	114 (69.9)	24	68.6	90	70.3	
Gender Identity at Baseline						N/A ^b
Non-binary TGD	42 (25.8)	9	25.7	33	25.8	
Binary TGD	86 (52.8)	26	74.3	60	46.9	
Cisgender	35 (21.5)	0	0	35	27.3	

SD = standard deviation, TGD = transgender and gender diverse, N/A = not applicable.

^a Other includes the following categories: Asian, Hawaiian or Pacific Islander, Native American or Alaska Native, Write-in responses.

^b Bivariate analyses were not performed because of 0 value in Gender Identity Consistent, Cisgender cell.

Table 2
Unadjusted and adjusted odds of mental health, substance use and healthcare utilization for gender identity fluid participants compared to gender identity consistent participants in New Orleans and Los Angeles, USA, 2017–2021 (n = 163).

	Yes % ^a	OR (95 % CI)	aOR ^b (95 % CI)
Mental Health			
Moderate/Severe Depression	33.7	0.96 (0.44–2.04)	0.87 (0.39–1.95)
Anxiety	41.7	0.84 (0.38–1.82)	0.90 (0.42–1.92)
Suicide Attempt (lifetime)	55.8	0.69 (0.32–1.49)	0.69 (0.32–1.49)
Substance Use (past 4 month)			
Smoking	30.1	1.59 (0.67–3.80)	1.43 (0.57–3.56)
Marijuana	73.6	1.63 (0.73–3.66)	1.54 (0.67–3.52)
Binge Drinking	28.2	1.14 (0.49–2.68)	1.15 (0.48–2.75)
Drug Use (no marijuana)	28.8	1.22 (0.52–2.85)	1.19 (0.50–2.82)
Polydrug Use (no marijuana)	17.2	0.63 (0.25–1.57)	0.61 (0.25–1.53)
Healthcare Utilization			
No Current Provider	14.7	2.09 (0.59–7.47)	1.96 (0.54–7.10)
No Recent Health Visit	36.2	5.84 (1.95–17.52)	5.87 (1.88–18.36)

OR = odds ratio, aOR = adjusted odds ratio; CI = confidence interval.

^a percentages reflect all participants.

^b adjusted for age, sex assigned at birth, ethnoracial identity, and study site.

In post hoc analyses models that excluded gender identity fluidity, gender identity at 24 months was significantly associated with depression and no recent healthcare visit. When including both gender identity at 24-months and gender identity fluidity in models, the association between gender identity at 24 months and depression remained significant, but the association with no recent healthcare visit was not significant. Notably, the association between gender identity fluidity and no recent healthcare visit remained significant (aOR = 4.61; 95 % CI: 1.43–14.83).

4. Discussion

In this secondary data analysis study, we utilized longitudinal data to retrospectively classify participants as gender identity fluid or gender identity consistent and examine cross-sectional associations with mental health, substance use, and healthcare utilization. Given the limited available data, secondary analysis studies may provide important insights to guide future research. Because primary analyses included participants who reported being cisgender at baseline, our findings not only support that gender identity is fluid but highlight the importance of measuring the construct longitudinally to include youth who are in different points in their gender identity formation.

We observed no differences in mental health and substance use outcomes between gender identity fluid and gender identity consistent participants. Because the prevalence of mental health challenges among TGD people is higher than in the general population, the demographic characteristics and size of our sample could have obfuscated differences. For instance, Kcomt et al¹¹ reported differences in 30-day tobacco use between gender identity fluid and cisgender consistent participants utilizing a large, nationally-representative sample. Studies with larger, more heterogeneous samples are needed.

Gender identity fluid participants were 5.9 times more likely than those who were gender identity consistent to abstain from a recent healthcare visit. Although not statistically significant, adjusted odds for not having a current provider was higher relative to other indicators suggesting that it might have been significant with a larger sample. Many providers have limited experience or training providing gender-affirming care and creating inclusive healthcare environments. Thus, TGD patients often report stigmatizing experiences interacting with providers, such as misgendering, which contribute to avoidance seeking future healthcare. (Chung et al., 2021) If providers assume TGD patient identities are consistent, gender identity fluid patients may be especially prone to misgendering and subsequently more likely to avoid seeking healthcare than gender identity consistent patients. Given the frequency of gender identity fluidity in our sample (79 %) and its potential impact on healthcare utilization, how to promote healthcare engagement among gender identity fluid TGD and affirm their identities should be essential content in medical training.

Results from post hoc analyses highlight the potential limitations of measuring gender identity cross-sectionally without considering gender identity fluidity. Studies in TGD people have historically been cross-sectional with more recent studies using longitudinal designs with repeated measures to better characterize health trajectories. (Calvetti et al., 2022; Reisner et al., 2021) This provides a unique opportunity to concurrently test for gender identity fluidity and its more proximal effects on mental and physical health. The time frame in which changes in gender identity are measured is also an important consideration.

Our study as well as the few other studies examining gender identity fluidity measured gender identity at 3 or more month intervals. (Kcomt et al., 2022; Real et al., 2023) Yet, gender identity fluidity can be situational and responsive to environmental context. Lykens et al (Lykens et al., 2018) reported in a qualitative study of non-binary participants that they often “borrowed the trans label” to minimize negative interactions when accessing healthcare. Daily diary studies or ecological momentary assessments could be ideal for determining if and how gender identity fluidity is shaped by certain situations (e.g., healthcare

visits) and, in turn, impact mental health and other health behaviors.

5. Limitations

As with most secondary analysis studies, we were limited by the data available. Our sample was non-representative of the U.S. TGD population and our analyses were underpowered. Furthermore, we were unable to explore the timing of longitudinal changes in health outcomes with gender identity changes such as through repeated measures analysis. We also operationalized fluidity as change in gender identity over time, which may be defined in other ways.

6. Conclusion

This study contributes to the limited literature on the impact of gender identity fluidity on health. Our findings highlight that gender identity fluidity may impact engagement with the healthcare system which is problematic given the lower levels of healthcare utilization of TGD people compared with their cisgender counterparts. (National Academies of Sciences, 2020) Future studies should employ longitudinal mixed methods study designs in larger samples to elucidate the complex relationship between gender identity fluidity and health outcomes.

CRedit authorship contribution statement

Manuel A. Ocasio: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **M. Isabel Fernández:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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