Psychosis in transgender and gender non-conforming individuals: A review of the literature and a call for more research

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ABSTRACT

Epidemiological studies have described higher rates of psychotic disorder diagnoses in transgender, as compared to cisgender, individuals. With the exception of this work and a small number of published case studies, however, there has been little consideration of gender diversity in psychosis research or clinical care. In this paper, we will review and critically evaluate the limited literature on gender diversity and clinical psychosis and articulate the critical need for more work in this field, more specifically on the following areas and how they bear on clinical care: 1) diagnostic biases; 2) how chronic non-affirmation and bias, gender dysphoria, and other gender minority stressors may operate as trauma and can contribute to clinically significant psychotic symptoms; 3) the potential impact of gender-affirming care, such as hormone therapies, on mental health and barriers for receiving such care in transgender and nonbinary individuals; and 4) culturally-sensitive and gender-affirming approaches for addressing psychosis. Finally, we consider ways in which researchers may engage in ethical, gender-affirming, and accurate approaches to better address gender identity in psychosis research. We hope that such research will aid in the creation of clinical guidelines for understanding, diagnosing, and treating psychosis in gender diverse individuals.

1. Introduction

Transgender (see Glossary, Table 1), or trans, individuals are at a startlingly greater risk for mental health concerns as compared to cisgender individuals or general population estimates (Dhejne et al., 2016; McNeil et al., 2017; Millet et al., 2017). Trans individuals experience higher rates of anxiety (Bockting et al., 2013) and depression (Bockting et al., 2013; Nemoto et al., 2011; Shipperd et al., 2010), and, alarmingly, rates of suicide attempts have been reported to be 22 times greater than population estimates (Adams et al., 2017a). This increased risk has been largely attributed to several important psychosocial factors that include: gender minority stress (Hendricks and Testa, 2012) whereby transgender people experience social stressors (e.g. stigma, discrimination, and violence) and internalized stressors (e.g., concealment, internalized stigma) as a result of oppressive and marginalizing cisnormative ideologies and systems (Puckett et al., 2021), chronic non-affirmation of gender identity (Parr and Howe, 2019), and gender dysphoria (Lindley and Galupo, 2020). Despite this mental health risk, the impact of holding a marginalized gender identity on understanding, diagnosing, and treating psychosis in those that demonstrate or indicate a need for care— which we refer to here as clinical psychosis—has been largely neglected. In the current paper, we aim to critically evaluate the epidemiological literature reporting rates of psychotic disorders among trans individuals and highlight critical areas for future research, including the potential for diagnostic biases, unique potential factors in the development of clinical psychosis in transgender people, and the impact of gender-affirming care in treating clinical psychosis. Finally, in order to develop a more complete understanding of how holding a minoritized gender identity bears on etiology and treatment efficacy in psychosis, we encourage accurate and affirming reporting of gender in

Author positionality statement: Authorship is alphabetical by last name as all authors contributed equally to this manuscript. One author self-identifies as a white man who is transgender, one author self-identifies as a white, cisgender man, and one author self-identifies as a bi-racial, cisgender woman.

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All authors contributed equally
2 We note here that many people experience psychotic symptoms without demonstrating a need for care (e.g., Johns and van Os, 2001).

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Definitions of terms used throughout the article.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Transgender, trans</td>
<td>Adjectives describing people whose gender identity and sex assigned at birth do not align based on traditional expectations. This is a broad category inclusive of multiple gender identities, including men/boys and women/girls, individuals who do not identify with a particular gender (agender people), and people who hold gender identities outside of the Western binary gender paradigm (e.g. two-spirit, genderqueer, gender fluid, bigender, and nonbinary people).</td>
</tr>
<tr>
<td>Cisgender</td>
<td>Adjective describing people whose gender identity aligns with society’s expectations based on their sex assigned at birth.</td>
</tr>
<tr>
<td>Nonbinary</td>
<td>Adjective describing people and/or gender identities outside of the Western binary gender paradigm of two discrete gender options: man/boy and woman/girl.</td>
</tr>
<tr>
<td>Cisnormativity</td>
<td>The assumption that a person’s gender identity and expression align with their assigned sex and/or gender role expectations associated with that sex.</td>
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<tr>
<td>Non-affirmation of gender identity</td>
<td>Behaviors and actions that signal to a person that they are not being viewed or accepted as the gender they know themselves to be (e.g., misgendering via use of incorrect pronouns).</td>
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<tr>
<td>Gender dysphoria</td>
<td>Distress related to incongruence between a person’s gender and their assigned sex, gendered aspects of their body, and/or others’ perceptions of their gender.</td>
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<tr>
<td>Biological sex</td>
<td>A constellation of characteristics, including chromosomal makeup (specifically absence or presence of Y), sex hormones, primary reproductive anatomy, and secondary sex characteristics (i.e., postpubertal characteristics developed in response to sex hormones).</td>
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<tr>
<td>Sex assignment / sex assigned at birth</td>
<td>A category designated for an infant, typically based on visible genitalia.</td>
</tr>
<tr>
<td>Transneutrogenativity</td>
<td>The relationship between a person’s gender and their sex assigned at birth; e.g., transgender and cisgender are gender modalities. (This is a relatively new but very useful term – see Ashley (2021b) for more.)</td>
</tr>
</tbody>
</table>

2. Review and synthesis of epidemiology literature

Current literature suggests that the prevalence rates of schizophrenia spectrum disorders are elevated among individuals in the trans community (Table 2). This is evident from small clinic-based studies reporting that persons who have received a diagnosis of gender dysphoria or gender identity disorder (a diagnosis that has since been dropped from diagnostic manuals due to its inappropriate pathologizing of nonconforming gender identities; Fraser et al., 2010; Winters, 2006) show rates of schizophrenia spectrum disorders ranging from 0.85% (Cole et al., 1997) to 3.67% (Judge et al., 2014), which are higher than the estimated prevalence rates in similar age groups (0.25%–0.56%; IMHE, 2018). Larger epidemiological studies report even more striking elevations in the prevalence rates of schizophrenia spectrum disorders in trans individuals, as compared to both global prevalence rates and to elevations in the prevalence rates of schizophrenia spectrum disorders in their cisgender counterparts (IMHE, 2018). Larger epidemiological studies report even more striking differences between cisgender and transgender individuals. For example, in two of the four large epidemiological studies reviewed (Becerra-Culqui et al., 2018; Dragon et al., 2017; Hanna et al., 2019; Wanta et al., 2019), transgender and cisgender groups were not matched on either age or race. Dragon et al., 2017; Hanna et al., 2019. In these studies, transgender individuals were, on average, 17 years younger and more likely to identify as Black or African American than their cisgender counterparts (Dragon et al., 2017; Hanna et al., 2019). Importantly, the symptom presentation of schizophrenia spectrum disorders changes over time, with positive symptoms becoming less severe and negative symptoms remaining stable or increasing with age (Austin et al., 2015). Thus, clinical comparison of the younger transgender and older cisgender samples in Dragon et al. (2017) and Hanna et al. (2019) may be muddled by age differences in symptom presentation. Furthermore, given that Black and African American people are overrepresented among those diagnosed with schizophrenia (Schwartz and Blankenship, 2014) due to diagnostic biases (Neighbors et al., 2003) and systemic disparities that engender poor mental health in persons with marginalized identities (Alegria et al., 2016; Clark et al., 1999), the findings of increased prevalence of schizophrenia spectrum disorders of Dragon et al. (2017) and Hanna et al. (2019) may be at least partly confounded by race. While differences in sample composition across studies may contribute to some of the variation in prevalence rates of schizophrenia spectrum disorders in transgender as compared to cisgender persons, they do not appear to solely account for the elevated risk of schizophrenia spectrum disorder in the transgender community. Indeed, Becerra-Culqui et al. (2018) observed highly elevated rates of a schizophrenia spectrum disorder diagnosis in trans, as compared to cisgender, adolescents despite matching for age and race.

Another factor which may account for the variance in reported rates of schizophrenia spectrum disorders among transgender people is recruitment strategy. While some studies recruited participants from small clinics that specialize in transition-related healthcare (Cole et al., 1997; de Vries et al., 2011; Gomez-Gil et al., 2009; Judge et al., 2014), other studies obtained their sample through retrospective reviews of medical records and insurance claims (Becerra-Culqui et al., 2018; Dragon et al., 2017; Hanna et al., 2019; Wanta et al., 2019). Given that these medical and insurance record reviews are likely to include inpatient records, the prevalence rates of schizophrenia spectrum disorders in these studies would be expected to be higher than in those studies that recruited from outpatient facilities. In support of this argument, while Hanna et al. (2019) found that transgender individuals were at elevated risk for schizophrenia, the prevalence of schizophrenia spectrum disorders in their cisgender sample was also elevated compared to age-standardized estimated prevalence rates (2.8% vs 0.33%; Global Burden of Disease Collaborative Network, 2018), indicating that their study likely overestimates the true prevalence rate of schizophrenia spectrum disorders.

Differences in the ways in which transgender identity was operationalized across studies may also contribute to the variability in reported prevalence rates of schizophrenia spectrum disorders. Across studies, participants have been identified as transgender on the basis of a formal diagnosis of gender dysphoria or GID as established by clinical interview (de Vries et al., 2011; Gomez-Gil et al., 2009; Judge et al., 2014) or the presence of related ICD codes (Becerra-Culqui et al., 2018; Dragon et al., 2017; Hanna et al., 2019; Wanta et al., 2019) or on the basis of a person’s self-identified gender identity (Cole et al., 1997). Given that not all individuals identifying as transgender meet the criteria for a diagnosis of gender dysphoria or historically GID (Ashley, 2021a) and electronic medical reviews have been shown to underestimate the population prevalence of a trans identity when compared to self-report (Zhang et al., 2020), studies using ICD codes or gender

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3 Here we acknowledge race as a sociopolitical—not biological—construct (Smedley and Smedley, 2005).
Table 2
Characteristics of studies reporting the prevalence of schizophrenia spectrum disorders in trans persons.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sample</th>
<th>Trans Identity Operationalized</th>
<th>Psychosis Operationalized</th>
<th>Age Range Recruited from</th>
<th>Reported prevalence rate</th>
<th>Estimated Prevalence for Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanna et al. (2019)</td>
<td>Reviewed 254 million discharge records for inpatient encounters. Trans persons were younger, more likely to identify as Black or African American and had a higher rate of non-elective admissions than were cisgender persons in this sample. Cisgender mean age: 57.2 Trans mean age: 40.3</td>
<td>ICD codes 302.5x, 302.6, 302.85</td>
<td>ICD and CCS codes Psychosis: ICD codes 295.00 – 298.8, 299.301, 299.11 Schizophrenia: CCS 659</td>
<td>18 – 65+</td>
<td>NIS database; a large publicly available database of inpatient encounters</td>
<td>Psychosis in trans persons: 14.7% Psychosis in cisgender persons: 4.3% Schizophrenia in trans persons: 14.2% Schizophrenia in cisgender persons: 2.8%</td>
</tr>
<tr>
<td>Dragon et al. (2017)</td>
<td>Reviewed 39 million Medicare fee-for-service claims. Trans persons were younger and more likely to identify as Black or African American than were cisgender persons in this sample. Trans persons were also more likely to qualify for Medicare based on disability, whereas cisgender persons were more likely to be entitled due to age. Cisgender mean age: 70.9 Trans mean age: 53.1</td>
<td>ICD codes 302.5x, 302.6, 302.85</td>
<td>ICD codes Schizophrenia: 295.x Schizophrenia and other psychotic disorders: 293.81, 293.82, 295.x, 297.x, 298.x</td>
<td>18 – 85+</td>
<td>CMS Chronic Conditions Data Warehouse</td>
<td>Schizophrenia: 22.1% for trans Medicare beneficiaries with chronic conditions (MBCC) 2.3% for cisgender Medicare beneficiaries with chronic conditions (MBCC) 28.2% for trans MBCC entitled on disability only 9.6% for cisgender MBCC entitled on disability only 6.7% for trans MBCC entitled on age only 0.9% for cisgender MBCC entitled on age only Schizophrenia and other psychotic disorders: 26.7% for trans Medicare beneficiaries (MD) with potentially disabling conditions 5.6% for cisgender MB with potentially disabling conditions 36.3% for trans MB with potentially disabling conditions entitled on disability only 13.0% for cisgender MB with potentially disabling conditions entitled on disability only 13.3% for trans MB with potentially disabling conditions entitled on age only 4.1% for cisgender MB with potentially disabling conditions entitled on age only</td>
</tr>
</tbody>
</table>

(continued on next page)
### Table 2 (continued)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sample Description</th>
<th>Clinical Site and Methodology</th>
<th>Diagnosis/Operationalized</th>
<th>Age Range</th>
<th>Recruited from</th>
<th>Reported Prevalence Rate</th>
<th>Estimated Prevalence for Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wanta et al. (2019)</td>
<td>Reviewed 53.5 million electronic health records of persons seeking clinical care</td>
<td>Diverse Health Center</td>
<td>Operationalized ICD codes 302.3, 302.5x, 302.6, 302.85</td>
<td>Median age: 35–39 for both groups</td>
<td>Explorys Inc database</td>
<td>Psychosis in trans men: 4.9% 12.2 times higher than cisgender reference males, 14.4 times higher than cisgender reference females</td>
<td>Schizophrenia in trans men: 2.0% 21.7 times higher than cisgender reference males, 32.6 times higher than cisgender reference females</td>
</tr>
<tr>
<td>De Vries et al. (2011)</td>
<td>105 adolescents with gender dysphoria</td>
<td>Diverse Health Center</td>
<td>Diagnosis of GID based on extensive diagnostic procedure</td>
<td>Diagnosis of schizophrenia based on DISC</td>
<td>Adolescents referred to the Gender Identity Clinic of VU University Medical Center, Amsterdam</td>
<td>Psychotic disorder in trans men: 0.37% Schizoaffective disorder in trans men: 0.16%</td>
<td>0.01% for ages 10–14 (Global Burden of Disease Collaborative Network, 2018)</td>
</tr>
<tr>
<td>Cole et al. (1997)</td>
<td>435 individuals with self-diagnosed gender dysphoria</td>
<td>Diverse Health Center</td>
<td>Mental-health history taken by researchers</td>
<td>Diagnoses of schizophrenia made using DSM-III R criteria</td>
<td>Individuals who presented a gender identity clinic</td>
<td>Psychotic disorder in trans men: 0.85% Schizophrenia in trans men: 0.37% Schizoaffective disorder in trans men: 0.16%</td>
<td>0.54% for age 30–34 (Global Burden of Disease Collaborative Network, 2018)</td>
</tr>
<tr>
<td>Gomez-Gil et al. (2009)</td>
<td>230 trans persons who presented with complaints of gender dysphoria between 2000 and 2006</td>
<td>Diverse Health Center</td>
<td>Diagnosis of GID based on semi-structured interview, DSM-IV + ICD criteria</td>
<td>Psychotic disorder in trans men: 2.5% Psychotic disorder in trans women: 1.6% Schizophrenia in trans women: 49.7x higher than cisgender reference females Schizophrenia in trans men: 2.8%</td>
<td>Hospital Clinic (Barcelona, Spain)</td>
<td>Psychotic disorder in trans men: 2.8%</td>
<td>0.54% for males aged 25–34 (Morgan et al., 2012) 0.35% for females aged 25–34 (Morgan et al., 2012)</td>
</tr>
<tr>
<td>Judge et al. (2014)</td>
<td>218 persons with gender dysphoria</td>
<td>Diverse Health Center</td>
<td>Diagnosis of GID from a mental health professional using DSM-IV or DSM-V criteria</td>
<td>Presence of schizophrenia diagnosis reported in medical record</td>
<td>Gender dysphoria clinic, Department of Endocrinology, St. Columcille’s Hospital</td>
<td>Schizophrenia in trans women: 5.03% Schizophrenia in trans men: 6.9% Overall prevalence rate: 3.67%</td>
<td>0.54% for age 30–34 (Global Burden of Disease Collaborative Network, 2018)</td>
</tr>
<tr>
<td>Spanos et al. (2021)</td>
<td>Retrospective review of 589 persons seeking services at a Gender Diverse Health Center</td>
<td>Diverse Health Center</td>
<td>Self-identification as trans or gender diverse</td>
<td>Official diagnosis of schizophrenia on medical record</td>
<td>Equinox Center, AU</td>
<td>Psychotic disorder in trans persons: 2.4% Schizoaffective disorder in trans persons: 0.7%</td>
<td>0.44% for 25–29 years old (Global Burden of Disease Collaborative Network, 2018) Schizoaffective disorder: 0.3%</td>
</tr>
</tbody>
</table>

*Note: Age range and estimated prevalence rates are provided for the given age groups.*
nonbinary people experience gender dysphoria, but ignorance and bias the risk of being diagnosed with a psychotic disorder is lacking. As such, may intersect with holding a non-cisnormative gender identity to impact operationalized identity (Veling et al., 2010). Yet, research into how such factors adversity (Morgan and Gayer-Anderson, 2016), and holding a margin individual with nonbinary gender identities. Although research—specifically contributes to the variance in prevalence rates across studies, due to additional differences in sample recruitment and composition, the reviewed studies still report rates of schizophrenia spectrum disorders in trans individuals that are higher than population estimates.

It is also important to note that the existing studies on prevalence of clinical psychosis in the trans community have not adequately consid individuals with nonbinary gender identities. Although research has demonstrated that up to one-third of the trans community has a gender identity that is not squarely male or female (e.g., nonbinary, genderqueer, two-spirit; Matsuno and Budge, 2017), none of the studies we reviewed examined psychosis prevalence in this subgroup. Many nonbinary people experience gender dysphoria, but ignorance and bias on the part of health care providers and systems can create barriers to care (Taylor et al., 2019). It is thus probable that in addition to being unexamined within the reviewed samples, nonbinary people have also been underrepresented in these samples. The invisibility of nonbinary people’s mental health needs has long been a problem even in the field of trans health (Matsuno and Budge, 2017). It is imperative that future research addresses this gap in understanding how psychosis specifically affects nonbinary members of the trans community.

In sum, the existing literature strongly suggests that risk for schizophrenia spectrum disorder diagnosis is elevated amongst transgender individuals. However, the wide range of reported prevalence estimates speaks to the importance of recognizing variability within the trans community. Indeed, there are multiple factors that can moderate an individual’s risk for developing schizophrenia, such as age (Kirkbride et al., 2012), socioeconomic status (Werner et al., 2007), childhood adversity (Morgan and Gayer-Anderson, 2016), and holding a margin-alized identity (Veling et al., 2010). Yet, research into how such factors may interact with holding a non-cisnormative gender identity to impact the risk of being diagnosed with a psychotic disorder is lacking. As such, future research would benefit from recognizing and exploring the impact of additional risk factors to more definitively understand whether trans individuals are at increased risk for developing a schizophrenia spectrum disorder and, if so, which factors may mediate the relationship between holding a nonconforming gender identity and a psychotic disorder diagnosis.

3. Critical areas of future work

Given strong suggestions from the epidemiology literature that rates of psychotic disorder diagnoses are elevated in the trans community, we now highlight critical areas for future research that will be important for both understanding the reasons for increased risk as well as ways to mitigate such risk.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sample</th>
<th>Trans Identity Operationalized</th>
<th>Psychosis Operationalized</th>
<th>Age Range</th>
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<th>Estimated Prevalence for Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meybodi et al. (2014)</td>
<td>83 persons with gender dysphoria</td>
<td>Diagnosis of GID according to the DSM-4</td>
<td>Diagnosis of a psychotic disorder according to the Persian SCID</td>
<td>Trans women: 25.31 years Trans men: 25.45 years</td>
<td>Tehran Institute of Psychiatry</td>
<td>0%</td>
<td>0.54% (Morgan et al., 2012)</td>
</tr>
</tbody>
</table>

1 General prevalence rate of schizophrenia as reported by research.
2 General prevalence rate of psychotic disorder as reported by research.
3 General prevalence rate of schizoaffective disorder as reported by research.

dysphoria diagnoses may only represent a sub-sample of the trans community and thus over-estimate the risk of schizophrenia spectrum disorders. Indeed, these studies typically report rates of schizophrenia spectrum disorders that are higher than those studies which used self-reported gender identity (Cole et al., 1997). While it is difficult to infer the extent to which the operationalization of gender identity specifically contributes to the variance in prevalence rates across studies, due to additional differences in sample recruitment and composition, the reviewed studies still report rates of schizophrenia spectrum disorders in trans individuals that are higher than population estimates.

We believe that future research should prioritize examining potential biases in diagnosing a psychotic disorder in trans individuals. Specifically, we highlight the potential for trans identity and non-cisnormative gender expression to be misconstrued as psychosis—a concern that is based on the overdiagnosis of psychotic disorders in other marginalized groups as well as the historical ways in which psychiatry and psychology have promoted views that conflate transness with psychopathology. Although it is not our position that psychotic disorders are social constructs, it would be willfully ignorant of the history of these fields to deny that sociopolitical influences have played a role in shaping diagnostic criteria in a manner that reflects and reinforces existing hierarchies and moral judgments of the majority (Drescher, 2015; Fernando, 2017) and, furthermore, that normative reactions to oppression came to be pathologized as psychosis at various points in history (Merskey and Shafran, 1986). For example, the fight for civil rights in the United States during the 1960’s and 1970’s became linked with a form of psychosis marked by hostility and aggression in Black men (Bromberg and Simon, 1966)—an ideology that has been argued to partly account for changes in the diagnostic criteria around that time and linked, in part, to the appearance of striking racial disparities in schizophrenia diagnosis (Metzl, 2010). Even today, Black and African-American people are 2.4 times more likely to be diagnosed with schizophrenia than white people (Olbert et al., 2018). Although certainly structural inequalities that drive poor mental health are a large contributor to elevated rates of psychosis—a topic that we return to later—there is empirical evidence to support misdiagnosis, due to clinician bias and/or cultural insensitivity, as one reason for the overrepresentation of a psychotic disorder diagnosis among Black and African American individuals (Loring and Powell, 1988).

3.1. Potential diagnostic biases

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Similarly, the fields of psychiatry and psychology have long conflated non-cisnormative gender identities with clinical delusion and psychopathology, and it is likely that this contributes to misdiagnosis in current practice. The discipline of trans health in Western medicine and psychiatry developed in the mid-20th century. These original practices and conceptualizations of then-called transsexuality continue to shape how our fields understand and treat trans people (Shuster, 2021; Stryker, 2017). Without appreciation of the distinctions between biological sex, sex assignment, and gender identity, knowing oneself to be a gender that did not align with sex assignment has been historically misunderstood by practitioners as delusional. Psychiatrists and psychologists working with trans individuals in the mid-20th century considered their patients’ gender identities and gender dysphoria to be symptoms of schizophrenia or hysteria, and for decades it was routine for these patients to be explicitly labeled as psychotic (Shuster, 2021). Advocacy efforts and shifts in the field have largely moved beyond this level of explicit bias thanks to a growing body of literature that has helped us understand gender diversity as normal and healthy. However, physicians and therapists continue to report little-to-no training on trans and nonbinary identities and health (Coutin et al., 2018;
Obedin-Maliver et al., 2011; Parameshwaran et al., 2017) and – much like the general population – continue to demonstrate transnegative biases and discomfort with gender diversity (Heng et al., 2018; Romaneilli and Lindsey, 2020). This persistent societal transnegativity/cisnormativity and lack of training, paired with our fields’ not-too-distant foundations of explicit pathologization of trans people, place diagnosticians at great risk of misinterpreting non-psychoptic experiences of traneness or gender dysphoria as psychotic.

Indeed, some trans and nonbinary people’s experiences require that a clinician have a thorough understanding of gender dysphoria and gender diversity to accurately differentiate between identity development or dysphoria and psychosis. Given that trans and nonbinary people develop their senses of self and group membership in cisnormative societies, it can feel destabilizing to recognize a gender identity that is different from one’s sex assigned at birth, particularly when people have not had prior connection to trans people and the trans community (Testa et al., 2014) or are in social and familial environments with high levels of stigma against trans people (Katz-Wise et al., 2017). Without language and understanding, trans people themselves may mislabel their own experiences of identity development as psychotic. In the following quote from musician and openly trans woman Laura Jane Grace’s memoir, she describes how, before she knew what gender dysphoria or transgender identity were, she worried that she may be psychotic and used descriptions that might cause a clinician to consider a diagnosis of a psychotic illness: “I thought I was schizophrenic, or that my body was possessed by twin souls – one female, one male, both wanting control” (Grace and Ozzi, 2016, P. 11).

Thus, we call, first and foremost, for more empirical work examining clinical bias and misdiagnosis as potential contributors to the increased rates of psychotic disorder diagnoses among trans individuals. This may be achieved through analogue studies that ask clinicians to assess written case studies, with some clinicians receiving information that the client identifies as cisgender and other clinicians receiving information the client identifies as transgender with all other information being kept constant. This approach has been employed to evaluate biases in diagnostic decisions on the basis of race (e.g., Loring and Powell, 1988) and sexual orientation (e.g., Biaggio et al., 2000). In addition, we call on practitioners to improve diagnostic practices when working with trans individuals generally, and especially with trans community members with complex or severe clinical presentations. Client conceptualizations must include a thorough understanding of individuals’ psychosocial factors and the “intricate interplay” between gender experiences and mental health (American Psychological Association, 2015), which can be gathered through careful culturally competent assessment (Hanns-mann et al., 2008). However, this level of competence in assessment and diagnosis cannot be achieved without increasing the integration of trans-related content into training curricula (Dubin et al., 2018). As recently as 2018, only 34.5% of sampled psychiatry residents endorsed that they would be ready to provide competent care to the trans community by the completion of residency (Coutin et al., 2018), with only 19.5% reporting that their education in this area was adequate. Psychiatrists and clinicians trained earlier may be even less likely to endorse or display competence in this area. Dubin et al. (2018) review the literature on transgender healthcare training and offer multiple suggestions for building or improving curricula, including emphasizing the importance of direct patient-learner interaction with the trans community, pedagogical intervention that improves attitudes as well as knowledge, and more robust integration throughout training. At least one study has demonstrated that the benefits seen from a single, standalone workshop on trans health disparities and trans healthcare needs diminished completely over a short follow-up period (Kidd et al., 2016), and other research has documented that provider transnegative bias is more predictive of competency than hours of trans-related training received (Strousma et al., 2019).

3.2. Unique potential factors in the development of psychosis in trans individuals

A second priority for research is into unique factors above and beyond diagnostic bias that might explain higher prevalence rates of psychotic disorders in the trans community. Converging evidence supports a diathesis-stress model of psychotic symptoms, whereby an intrinsic biological risk towards psychosis interacts with social and environmental stressors to influence the development of symptoms (Andreasen, 1999; Bleuler, 1963; Rosenthal, 1963). Such social and environmental contributors to schizophrenia symptoms include (but are not limited to) interpersonal stressors like discrimination (Pearce et al., 2019) bullying (Catone et al., 2018), and childhood trauma (Kelleher et al., 2013)—risk factors whose commonality has been described as the “negative experience of being excluded from the majority group” (Selten et al., 2013) and are, in part, a byproduct of systemic inequalities and oppression. Indeed, recent work has explicitly linked structural racism in the United States with psychosis risk (Anglin et al., 2021), and discrimination, bullying, and childhood trauma have been found to mediate moderate to large portions of psychosis risk in LGB populations (Gevonden et al., 2014; Post et al., 2021).

Trans people report much higher rates of childhood trauma, bullying, and discrimination experiences than the general population (e.g., Barr et al., 2021; Day et al., 2018; James et al., 2016), thus creating particular vulnerabilities that likely increase risk for psychotic disorders, though no known research has established this link specifically within the trans community. Additional experiences unique to the trans community may create vulnerability to the development of psychosis. Beyond discrimination, the gender minority stressors of gender dysphoria and non-affirmation of gender are also associated with significant distress and increased severity of psychiatric symptoms, including PTSD (Barr et al., 2021; Lindley and Galupo, 2020). Trans people report that both gender incongruence (between identity and body and/or between identity and social designations/perceptions of gender) and chronic invalidation are incredibly painful and can be disorienting (Austin et al., 2021; Cooper et al., 2020; Galupo et al., 2020). The accumulation of these experiences can have a destabilizing effect and contribute to profound stress on one’s psyche. Thus, the experience of knowing oneself to be a gender which is different from how one is labeled and perceived can not only be misinterpreted as psychotic by a non-culturally-competent diagnostician, but this experience can also give rise to destabilization which can make the development of psychotic illness more likely. The field would benefit from research that explored oppression- and non-affirmation predictors of both psychotic symptoms and diagnoses of psychotic illness in the trans community, as well as the potential relationship of gender dysphoria to the development of psychosis. Given the documented impact of multiple marginalization on psychiatric and health risk (e.g., Lefevor et al., 2019; Reinka et al., 2020; Velez et al., 2014), research in this area must take an intersectional lens.

Another relevant factor for interpreting increased prevalence rates of psychotic disorders within the trans community is substance use. Accumulating evidence supports a link between substance use and psychosis such that substance use, particularly cannabis, can both induce acute psychosis (Fiorentini et al., 2011) and increase the risk of

\[4\] For example, a recent study of more than 500 transgender adults found that 93% had experienced anti-trans discrimination in their lifetimes, 79% had experienced anti-trans victimization in their lifetimes, and more than 1 in 3 reported childhood sexual and/or physical abuse (Barr et al., 2021). Surveys assessing trans people’s school experiences have consistently documented bullying and harassment rates of well over 50% (Grant et al., 2011; James et al., 2016; Witcomb et al., 2019). Prevalence rates are consistently higher among trans people with intersecting minoritized and marginalized identities (e.g. BIPOC trans people and trans women; Grant et al., 2011).
more chronic psychotic symptoms. Indeed, meta-analyses suggest that cannabis use increases the risk of developing a chronic psychotic disorder in a dose-response fashion (Marconi et al., 2016), a finding which is supported by longitudinal data demonstrating that cannabis use can give rise to, or worsen existing, psychotic symptoms in young adolescence (Fergusson et al., 2003). Research has demonstrated prevalence rates of excessive substance use in the trans community that are higher than what is typically found in the general population. This increased risk is partially mediated by gender minority stress (e.g., external and internalized stigma), gender dysphoria, and gender non-affirmation (Connolly and Gilchrist, 2020; Gonzalez et al., 2017). Research exploring the possible link between substance use in the trans community and prevalence rates of clinical psychosis would provide needed insight into another potential mechanism for increased psychosis risk, as well as opportunities for community-based prevention efforts.

3.3. Impact of gender affirmation on mental health

Research has consistently demonstrated that within the trans community, social and medical gender affirmation is associated with improved psychological functioning, less severe psychiatric symptoms, and reduced utilization of mental healthcare (Baker et al., 2021; Bråstrom and Pachankis, 2020; Hughto et al., 2020; Wernick et al., 2019; White Hughto and Reisner, 2016). Gender affirmation through both social and medical/physical channels (e.g., coming out as a different gender, changing presentation via clothing or hair, undergoing hormone therapy to masculinize or feminize appearance, surgical interventions to change primary or secondary sex characteristics, etc.) often reduces experiences of non-affirmation (e.g., being incorrectly gendered) and gender dysphoria related to body dissatisfaction. Given that non-affirmation and gender dysphoria can be extremely psychologically disruptive (Austin et al., 2021; Cooper et al., 2020; Galupo et al., 2020), it should not be a surprise that reduction of non-affirmation and dysphoria are associated with overall improved mental health. We hypothesize that this phenomenon would extend to trans and nonbinary individuals with clinical psychosis, as well, such that for some, gender affirmation would reduce severity of psychosis and/or improve overall mental health and functioning. Further research on the impact of gender affirmation on psychotic symptoms will aid providers in better treatment planning and expectation setting with clients at the intersection of psychosis and gender dysphoria.

Importantly, however, trans and nonbinary individuals with psychosis and other severe mental illness currently face added barriers to accessing gender affirmation (Peta, 2020), often preventing them from experiencing critical relief from gender dysphoria. Because of the aforementioned historical diagnostic biases in our field and the dual stigma of severe mental illness and non-cisnormative identity, clinicians and staff may be dismissive of individuals’ stated genders, blocking access to even social affirmation (e.g., refusing to use the pronouns a patient requests). Clinicians may also be reluctant to endorse access to gender-affirming medical care if a person displays signs or reports history of psychosis. This denial of services, however, is not consistent with best practice if clients demonstrate a consistent pattern of transgender identity and gender dysphoria and have the capacity to engage in informed consent (Deutsch, 2016; Henin et al., 2022). In fact, delaying that gender dysphoria can be easily differentiated from experiences of psychosis through thoughtful clinical interview and review of patients’ histories (Brye et al., 2018). Further, there are a small number of published case studies documenting gender-affirming medical interventions and consequent successful reduction of gender dysphoria in trans patients with psychosis (Gerken et al., 2016; Janssen et al., 2019; Meijer et al., 2017). Given the positive and protective role gender affirmation often has on trans people’s mental health (American Psychological Association; Assoc, 2015), it is particularly critical that people with severe mental illness have access to potentially helpful interventions. We call on researchers to assess the mental health impact of existing barriers to gender-affirming care, specifically for trans people with psychosis. We further call on clinicians and institutions to work to reduce barriers that do not serve the best interests of the trans community.

3.4. Culturally-sensitive and gender-affirming approaches to addressing psychosis

A further priority for research is in effective care approaches for trans people with psychosis. As outlined in an earlier section, there are likely unique potential factors that may confer risk to psychosis in transgender, as compared to cisgender, individuals. Indeed, schizophrenia is perhaps most accurately characterized as a equifinal syndrome, whereby a diversity of pathways may lead to mechanistically disparate but clinically similar syndromes (Green and Glausier, 2016). Accordingly, treatment adaptations are required to address these unique environmental risk processes in trans individuals (Coyne et al., 2020).

Thus, we call on researchers and clinicians to better understand the trans community’s specific needs in receiving treatment and care related to psychosis and to develop and test approaches that meet these needs. Here we consider the focus of treatment to be not necessarily the unusual beliefs and experiences that characterize psychosis, but rather their associated distress, as hallucinations and delusions are not always subjectively experienced as a negative outcome (Feyerss et al., 2021; Sommer et al., 2010), together with subjective wellbeing and role functioning. Unfortunately, there has been limited mental health intervention research in trans clients specifically (Budge et al., 2017), and this is doubly true for trans people with clinical psychosis. There is only one known published longitudinal RCT focused on mental health interventions for trans people, and it expressly excluded individuals with psychotic symptoms (Budge et al., 2021).

Along with developing effective interventions, we also highlight the need to improve access to and utilization of mental health interventions within the trans community (Snow et al., 2019). Trans peoples’ barriers to mental healthcare include lack of clinician competence, avoidance of care due to previous negative experiences or fear of mistreatment, and issues related to financial and structural accessibility (e.g., cost of care, transportation, ability to take off work or keep track of scheduled appointments, etc.; James et al., 2016; Shipperd et al., 2010). Although this has not been studied, it is reasonable to be concerned that the dual stigma of trans identity and severe mental illness would further heighten such barriers. Additionally, individuals with clinical psychosis are more likely to need and/or receive crisis or inpatient mental health care, but trans patients may experience anti-trans bias in emergency departments (Samuels et al., 2018), and trans people’s experiences in inpatient and residential settings are often discriminatory and/or non-affirming (Walton and Baker, 2019).

Finally, while we have heretofore been considering clinically significant psychosis as an outcome in individuals with a non-cisnormative gender, we would also like to highlight the work of mental health activists who have solidified madness—a term reclaimed by these activists—as a sociopolitical identity in its own right (Gorman and LeFrançois, 2017; Schrader et al., 2013). Thus, within a multicultural treatment framework, clinicians may also consider the client’s background as it pertains to their alignment with a mad identity and how that bears on core values (Schrader et al., 2013).

3.5. Ethical, gender-affirming, and accurate approaches to scientific research

As we have reviewed, epidemiological data document diagnostic disparities on the basis of gender modality. However, there is strikingly little data investigating the mechanisms of these disparities and their implications. Throughout this paper we have highlighted specific gaps in
we recommend accurate and affirming collection and reporting of gender and assigned sex. At a minimum, we advise that researchers familiarize themselves with the differences between gender identity and sex assigned at birth and consider adopting a multi-step method that does not conflate these two questions and provides options that are comprehensive and affirming. In considering response options for such questions, we encourage researchers to consider how they reflect the lived experiences of members of the trans community. Puckett et al. (2020) provide a helpful list of recommendations for asking questions about sex at birth and gender in scientific research that is based on input from the trans community. Finally, we would like to highlight the importance of including impacted community members—transgender individuals, individuals experiencing/diagnosed with psychosis, and their intersections—on research teams and community advisory boards. Such community-based participatory research may engender research questions and methods that are better aligned with and reflective of the lived experiences of trans individuals experiencing psychosis, providing a more accurate interpretation of findings, and help convey findings in a way that is accessible to the communities served (Adams et al., 2017b; Kalathil and Jones, 2016; Tebbe and Moradi, 2016).

References

Deutsch, M.B., 2016. Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People. University of California, San Francisco.

9 We take the opportunity to note that there are no authors that identify as having lived experience with psychosis and acknowledge the limitations thereof.


