The Misdiagnosis of Schizophrenia: A Closer Look at the Gender Disparity in Diagnosis

Zaim Zibran

November 12, 2019
DIAGNOSTIC GENDER DISPARITY OF SCHIZOPHRENIA

Background

Schizophrenia is a worldwide mental health disorder affecting over 21 million people (World Health Organization, 2018). This hallucinatory disorder is one of the top 15 leading causes of disability worldwide (GBD 2016 Disease and Injury Incidence and Prevalence Collaborator). Those suffering from schizophrenia tend to have much lower life spans than the general population (Olfson, Huang, Crystal, & Stroup, 2015), and about 4.9% of patients commit suicide (Palmer, Pankratz, & Bostwick, 2005). Given the extent of the damage such a disorder can cause, it is crucial that the diagnosis of schizophrenia be done with utmost accuracy. However, various studies have demonstrated misdiagnosis and diagnostic disparity of schizophrenia between genders (Longenecker et al., 2010).

In a clinical study done in 2000, for example, researchers found that clinicians are more hesitant to diagnose women than men with schizophrenia; the study demonstrated that to receive a schizophrenia diagnosis, on average, women had to wait 2.6 years, or roughly 3.4 hospital admissions, compared to the 1.6 years or 2.3 hospital admissions for men (Hoye, Hansen, & Olstad, 2000). However, the roots of this disparity are complex and encompass a wide range of areas. The key thread throughout such studies, though, is that there exists an underdiagnosis of women suffering from schizophrenia (Longenecker et al., 2010).

Clinician Bias

Clinician bias in schizophrenia diagnosis between genders has been demonstrated in multiple studies. In an experimental case-simulation study, it was found that given identical symptom descriptions with the only difference being in the gender pronoun, clinicians were much more likely to diagnose the male description with schizophrenia than the female description- 80.7% of male cases received a diagnosis in contrast to the 68.7% of female cases.
DIAGNOSTIC GENDER DISPARITY OF SCHIZOPHRENIA

(Hoye, Rezvy, Hansen, & Olstad, 2006). In another similar study, this finding was extended to
the fact that female psychiatrists diagnosed the males and females at the same rates, unlike male
psychiatrists (Loring & Brian, 1988), indicating the gender divide not only in patients, but also
amongst clinicians themselves. The former study hypothesizes that the bias is likely caused by
clinicians having previously experienced females being more coherent than men in describing
their feelings and in their ability to seek help; such experiences would skew their decision-
making to infer that a female is likely suffering from stress or another problem attached to their
personality rather than one relating to a mental disorder.

Eclectic Biopsychosocial Approach

Clinician bias, although a significant problem, is only part of the equation in the
diagnostic errors and disparity between genders. Schizophrenia presents itself and differently in
males versus females, which can lead to diagnostic errors (Leung & Chue, 2000).

Schizophrenia is not just seen in adults, but also commonly in children, then termed Early
Onset Schizophrenia (EOS), which occurs from teen years up to late adolescence (McGrath,
Saha, Chant, & Welham, 2008). EOS is at the root of the gender disparity in schizophrenia, as
significantly more males than females are diagnosed with EOS (Vernal et al., 2018). A study
done in 2000 by Riecher-Rössler and Häfner found that, on average, first admission of women
with regards to schizophrenia appears between 3.5 and 6 years after men. The researchers adopt
the Estrogen Hypothesis to explain this biological gender disparity of schizophrenia, arguing that
oestradiol, the major estrogen sex hormone in females, plays a key role in protecting women
from EOS. They claim that this hormone, active between puberty and menopause, has been
shown by both epidemiological statistical research and clinical research to play a protective role
against schizophrenia. This is supported by data from their study suggesting that around age 45,
as production of the hormone begins dropping, women become more susceptible to schizophrenia, and this theory would account for the rise in schizophrenia cases that has been shown to occur in women of this age. This theory is further corroborated by an earlier clinical research study illustrating a direct variation of estradiol levels with schizophrenia symptoms in women (Riecher-Rössler et al., 1994). The lack of estrogen in men places them at a higher risk of EOS and high anti-psychotic medication dosages (Hooley, 2010) and leads to a higher necessity in men for neuroleptic drugs -drugs which depress nerve function- (Salokangas, 2004)- which further establishes that schizophrenia presents itself differently between men and women.

**Figure 1** Progesterone and Estrogen Levels in Women Varying with Age (Andrews)

**Figure 2** Distribution of Age at Schizophrenia Onset, Separated by Gender (Häfner et al., 1993)
This physiological gender disparity in schizophrenia paves the way for gender-dependent symptomatology and prognoses. One study found that males display more unfavorable premorbid functionality and behavior, with increased negative symptomatology and cognitive damage, as well as more severe brain structural, developmental, and neurophysiological abnormalities (Leung & Chue, 2000).

This study also showed stark contrast to the symptomology in females, who showed more auditory hallucinations and persecutory delusions, but were easily treated by antipsychotic medication in the premenopausal period and demonstrated relatively lesser negative symptoms. This difference in prognosis is likely a result of EOS, as schizophrenia in early teen years would severely hamper brain development and cognitive function of the high number of affected males.

The effect of the EOS gender disparity leads onto the misdiagnosis. The relatively later onset of schizophrenia in women implies that women are more physically, psychologically, and socially developed, and puberty, a transformative stage, is typically not hampered, resulting in less severe interpersonal and social functionality issues than males (Hooley, 2010). A study by Andia et al. (2005) uncovered that as a result, in women, this high level of social functionality is commonly demonstrated by strong family or relationship roles such as in marriages and is also often accompanied by elevated social independence and professional success as well. EOS in men disrupts and dismantles their development so much that they often show higher levels of self-neglect and drug abuse (Häfner et al., 1993). While marriage, employment, and other social factors have not been shown to serve as protectors against schizophrenia in females, they can affect prognosis, and furthermore, the concurrence of increased EOS in males and low social and professional functionality has a strong causal effect on their inability to find a partner or
DIAGNOSTIC GENDER DISPARITY OF SCHIZOPHRENIA

employment (Riecher-Rössler & Häfner, 2000)

Conclusion

This high functionality of women tends to shadow their symptoms and this results in underdiagnosis on the clinicians’ part even when the symptoms appear similar as they do in males. The schizophrenic symptoms are perceived by clinicians to be mild as a result of women’s high functionality, which often results in mass underdiagnosis of women who suffer from schizophrenia (Longenecker et al., 2010). This diagnostic gap occurs from clinicians’ misinterpretations and inability to distinguish symptomatic and prognostic differences in the appearance of schizophrenia between males and females. As has been discussed, the biological, social, and psychological aspects work synchronously in creating a disparity in diagnosis; additionally, clinician bias must also be addressed. Both of these key factors should be tackled by mandating a transformed diagnostic criteria for schizophrenia which would be differentiated by gender, with a lens of the biopsychosocial gender disparities of schizophrenia. Such an action would be highly beneficial in countering the prevalence of underdiagnosis of schizophrenia in women and would allow for diagnostic and treatment standards to be more personal and accounting for gender differences, while simultaneously tackling clinician bias through a standardized criteria.
DIAGNOSTIC GENDER DISPARITY OF SCHIZOPHRENIA

References


https://doi.org/10.1111/j.0065-1591.2000.0ap25.x


https://doi.org/10.1001/jamapsychiatry.2015.1737

https://doi.org/10.1001/archpsyc.62.3.247

DIAGNOSTIC GENDER DISPARITY OF SCHIZOPHRENIA

https://doi.org/10.1093/schbul/20.1.203

