



Classificatory Systems and Gender

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Abstract

Classificatory and diagnostic systems play an important role in helping clinicians make treatment decisions, communicating with each other, supporting medical education, and conducting research. Gender influences multiple aspects of psychopathology, help-seeking, social support, economic status, cultural expectations, and factors such as vulnerability to discrimination and violence. It is therefore essential for the DSM and ICD nosological systems to become gender sensitive. Gender differences are seen in prevalence, risk factors, course, and prognosis of psychiatric illness. The recent revisions in the diagnostic systems have tried to address some of these issues; however, there is still an opportunity to use better gender-sensitive approaches in the classificatory systems. As we move toward newer paradigms in classification, from a descriptive to an etiological approach, we have opportunities to include biological aspects of gender, i.e., sex, as well. Various approaches in classification varying from a gender-neutral approach to providing differing diagnostic thresholds for men and women, using diagnostic specifiers, or having gender-specific diagnosis can improve care for both genders. In this chapter, we discuss various gender-based approaches that classificatory systems have used and make suggestions for better classification of psychiatric disorders among women mental health based on the influence of gender on psychiatric illness.

Keywords

Gender · Classificatory systems · Women's mental health · DSM · ICD · Nosology · Diagnosis

List of Abbreviations

ADHD	Attention deficit hyperactive disorder
AN	Anorexia nervosa
ASD	Autism spectrum disorders
BPAD	Bipolar affective disorder
BPD	Borderline personality disorder
cPTSD	Complex post-traumatic stress disorder
DSM	<i>Diagnostic and Statistical Manual of Mental Disorders</i>
ICD	International Classification of Diseases
ID	Intellectual disability
LLPDD	Luteal phase dysphoric disorder
MAD	Mixed anxiety-depression
MDD	Major depressive disorder
PMDD	Premenstrual dysphoric disorder

As historians of medicine have increasingly argued, illness is the product of a subtle interplay between cultural perspectives and what is also a shifting biological reality. This is particularly the case with mental illness...

(Excerpt From: Lisa Appignanesi "Mad, Bad, and Sad.") (Appignanesi 2011)

Introduction

The development of systems for classification of medical diseases has been fundamental to the practice of medicine, and it has long been recognized that diagnosis is key to all medical practices and medical research investigations. The diagnostic system lays the foundation in helping clinicians make treatment decisions, informing prognosis, communicating with scientific expert and medical professionals, and supporting medical education. Another important purpose is in conducting research and to plan for public health services.

The current diagnostic systems follow the tradition set in place since the publication of the third edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) that follows a conceptual paradigm that is empirically based, atheoretical, and agnostic toward etiology (Pichot 1986). However, we are now moving away from the clinically descriptive paradigms and seeking a new diagnostic system grounded in neurobiological science (North and Surís 2017).

The diagnostic criteria should, ideally, not show any bias based on prejudices within society, which in turn has increased the interests of DSM and International Classification of Diseases (ICD) nosological systems to become culturally and gender sensitive.

History of Gender Biases in Psychiatry

From the mid-nineteenth century through the twentieth century, women were diagnosed with disorders such as neurasthenia, nervous prostration, dyspepsia, and hysteria, which were attributed to the “wandering” of the uterus within women’s bodies (Ehrenreich and English 1979). Women institutionalized in mental asylums were subjected to clitoridectomies, hysterectomies, removal of their ovaries, and leeches applied to their labia and prescribed forced rest cures for their psychiatric diagnoses (Ozarín 1994).

When women began advocating for increasing social and political rights, medical experts evoked frightening pronouncements about the possible impact this might have on society. Women were accused of having a disorder called andromania, “a passionate aping” of “everything mannish,” and it was feared that if women won the right to vote, it would “make them change physically and psychically and pass along pathologies to their children”.

A contemporary example of gender bias was the invisibility of the impact of childhood sexual abuse, adult sexual assault, domestic violence, and other traumas on the lives of women, in the classificatory system. Symptoms related to the consequence of abuse and trauma were often misdiagnosed as borderline personality disorder (BPD), with some authors reporting that there is a female gender bias with regard to the diagnosis of BPD (Becker and Lamb 1994).

Gender and Nosology

Gender is defined as a complex psychological, biological, and behavioral process that influences an individual's representation as female or male or the psychosocial expression of living as a man or woman (Narrow et al. 2007).

Gender influences all aspects of psychopathology, including the stressors and exposures that precede the onset of disease, symptom expression, help-seeking behavior, how one is treated in a system, social support, economic status, cultural expectations, and other environmental factors that could influence individual vulnerability to mental illness. Gender also plays a major role in expressions of distress and definitions of normality and pathology (Narrow et al. 2007).

Hence, culture and gender are factors integral when making a psychiatric diagnosis, and a greater appreciation of the interplay between culture, gender, and biology can help clinicians improve diagnosis and treatment planning.

Evolution of Classificatory Systems: Gender Considerations in Classificatory Systems

The first edition of DSM was published in 1952, and the DSM-I did not include any gender-related findings, though it highlighted the need for statistical information and provided tabulations for reporting demographic and related information (Grob 1991). The DSM-II (1968) had not shown much progress from the first edition, though it mentioned a higher prevalence of "delinquent reaction of childhood" in boys and discussed gender differences in the expression of the disorder.

The DSM-III came into light in 1980 and had a drastic change in the approach to diagnosis, breaking away from psychoanalytic jargon and adopting a phenomenological, descriptive, categorical approach, seeking and using documented research findings, enumerating more precise criteria, and assigning codes. DSM-III also added gender-specific information and sex ratios for many disorders. These data varied widely, with some being specific and others vague, and some acknowledging that there was no available information. However, there was definitely an increased gender focus over previous editions.

The success of DSM-III and DSM-III-R brought diagnosis to the forefront in psychiatry, but this also triggered gender debates concerning the proposed diagnosis of late luteal phase dysphoric disorder (LLPDD) and its potential harm to women (Endicott 2000). The DSM-III-R included more precise sex ratios, and "gender identity disorder" included separate diagnostic criteria for children, but not for adolescents or adults.

In the context of severe mental disorders, the description of schizophrenia in DSM-III had an upper age limit of 45 years for the onset of schizophrenia, which may have caused an artifactual increase in rates of schizophrenia in men and also a neglect of late-onset schizophrenia in women. This age criterion was later removed from DSM-IV.

The DSM-IV expanded the manual text to include information on gender-specific differences in the course and expression of disorders under the heading “Specific Culture, Age, and Gender Features.”

The working group for LLPDD changed its name to “premenstrual dysphoric disorder” in DSM-IV.

Several critiques questioned statements provided in the DSM-IV concerning the differential prevalence of mental disorders for men and women. The concerns raised were regarding two issues in particular, biases in sampling and biases within the diagnostic criteria themselves, which complicate the understanding of differential sex prevalence (Hartung and Widiger 1998).

The DSM-IV-TR improvised on the previous version by including independently critiqued systematic reviews to provide written documentation for the sex and gender variation and also included potential explanations for reported sex ratios (e.g., help-seeking behavior, study setting, inaccurate assessments, culture and age differences) (Pichot 1986; Spitzer et al. 2002).

The development of the DSM-5 demonstrated a commitment to being more gender and culturally sensitive. Specific task teams and subgroups were employed to address gender, cultural, and cross-cultural issues, including diverse representation in the development process. This process resulted in fairly significant changes to diagnostic labels and culture-specific diagnoses (van de Water et al. 2016).

It is noted that mental disorders show marked gender differences in prevalence, symptomatology, risk factors, or course. Some disorders only occur in women such as perinatal depression and premenstrual dysphoric disorder (PMDD), while others are markedly influenced by female-specific factors such as hormonal changes over the life cycle or during reproductive processes.

Riecher-Rössler in her paper on “Prospects for the classification of mental disorders in Women” highlights the fact that the current classificatory system (ICD and DSM) hardly takes into account gender-specific aspects (Riecher-Rössler 2010).

Sex with its biological and gender with its psychosocial correlates had a strong influence on psychiatric disorders with respect to the prevalence, symptomatology, risk factor, course, treatment-seeking behaviors, and management, but this did not find its presence in the current classificatory systems.

In her paper, she discusses how having a gender-specific or gender-sensitive classification will have a positive influence on research and clinical practice. The author’s suggestions on how a gender-based approach can be applied to the classificatory system are by using:

- (a) Gender-specific thresholds – using different clinical thresholds for men and women
- (b) Gender-specific diagnoses – exclusively diagnosed in women
- (c) Gender-sensitive approaches – situation-specific diagnosis and using specifiers (Riecher-Rössler 2010)

We use this three-pronged gender-based approach to examine several psychiatric disorders in the next part of the chapter. For this, we first review gender differences in some of the major disorders and then discuss how they might influence classification.

Gender Aspects of Psychiatric Disorders and Its Influence on Classificatory System

Schizophrenia

Sex and gender differences in schizophrenia have been described for a long time. Such differences have been described in the incidence and prevalence, age at onset, risk factors, symptomatology, course, and prognosis of schizophrenia. Gender differences have also been seen in brain morphology and functioning.

Age at Onset

Age at onset of illness in schizophrenia is one of the most consistently recorded gender differences across the world and in different cultures. Schizophrenia has been shown to have a later age of onset in women and a slightly better course, especially in younger women (Jablensky et al. 1992).

There is some evidence that the age difference might be due at least partly to the female sex hormone estradiol being a protective factor. Men show their peak of first admissions in their early twenties and women only in their late twenties. Furthermore, there is a second, smaller peak of onset in women after age 45 (Häfner et al. 1993). Studies suggest that women are protected to some extent against schizophrenia between puberty and menopause by their relatively high physiological estrogen production during this phase (Riecher-Rössler and Häfner 1993, 2000).

It is around age 45, several years before menopause sets in, that estrogen production begins to fall. Women lose the protection estrogens potentially give, and this may account for the second peak of illness onset in women after age 45. Several investigators have reported initial promising results using estrogens as a therapeutic agent in schizophrenia (Riecher-Rössler 2000, 2018).

Symptomatology

Negative symptoms occur more often in men, and more positive and affective symptoms are seen in women. However, these results are not consistently established (Riecher-Rössler 2000, 2018).

Course

Women seem to have a more favorable course and a better psychosocial outcome than men. They have been shown to have fewer and shorter hospital stays, better social adjustment, and a better living situation than men. Women's mortality is also lower, mainly due to their significantly lower suicide rate. The tendency for the course to be better in women certainly also has to do with the later age of onset,

which is associated with better social integration. Other contributing factors could be better care offered to women and women's better compliance (Thorup et al. 2014).

After age 40, women not only fall ill twice as frequently as men; their symptoms and the course of their disease also seem to be worse. However, there seem to be more differences between women and men in late-onset schizophrenia. In the ABC (Age, Beginning, Course) schizophrenia study, men with schizophrenia onset over 40 years showed significantly milder symptoms than those with early onset, whereas late-onset women suffered from symptoms almost as severe as early-onset women (Riecher-Rössler et al. 1997).

The Role of Estrogen

In this context, it has also been suggested that women who are vulnerable to the development of schizophrenia may have a generally lower level of endogenous estrogen than healthy women. Therefore, they are less likely to experience the neuroprotective effects of endogenous estrogen, and this potentially contributes to the onset of schizophrenia (Townsend Taylor et al. 2009).

Initial studies have documented positive therapeutic results achieved through the use of estrogen. Further studies are needed, particularly with regard to certain subgroups of women, i.e., those with frequent perimenstrual relapses or menopausal and postmenopausal women.

Gender and Classificatory Systems in Schizophrenia

The DSM-5 has given details of the gender differences in incidence, age at onset, course, and prognosis. This section in DSM-5 also discusses the possibility of late-onset psychosis, through meeting the criteria of schizophrenia, being a completely different entity in women beyond 55 years of age.

The criticism with the approach in the current classificatory systems (ICD-DSM) is that it embraces an Aristotelian view of psychiatric disorders as discrete entities that are characterized by specific signs, symptoms, and natural histories. This poses a significant problem in explaining the heterogeneous population of individuals with similar symptoms but of very different etiopathogenetic background or being different subtypes of the disorder. Studies have suggested that women with later age at onset of psychosis are considerably different from women with early-onset psychosis.

A gender-focused approach here would be to have "age as a specifier" in women, which could add value to both research and clinical practices. Exploring the difference in age of onset can further help understanding the etiological role of estrogen, and this also opens opportunities to use estrogen as a therapeutic tool for psychosis.

Another approach could be an etiological one as discussed in the Research Domain Criteria (RDoC).

RDoC has a goal to create a neuroscience-based framework for studying mental disorders. The basis of psychosis in women may be a neural circuit activation in response to hormonal changes which needs to be researched further. This may also help us develop personalized treatments and help deliver preventive interventions for psychiatric disorders.

Mood Disorders

Bipolar depression

There is strong, consistent, and widely accepted evidence that depression impacts differently in men and women with respect to the prevalence, course, symptom profile, and comorbidities. Increased risk for women is also noted in the diagnostic subtypes of depression – dysthymia, atypical depression, seasonal affective disorders, and rapid cycling and mixed affective states of bipolar affective disorder (BPAD).

Prevalence

Several epidemiological studies have suggested that the prevalence of depression is twice as common in women as compared to men. Recent epidemiological research suggests evidence for a female preponderance in unipolar depression, present across different cultural settings (Lucht et al. 2003; Seedat et al. 2009).

The Lundby depression study identified that major depressive disorder (MDD) and adjustment disorder with depressed mood were significantly higher in women than men. They also found the mean age of onset of all subtypes of depression in the Lundby population was 46.2 years in women and 47.6 in men. The age-specific incidence rates indicate that women aged 15 and upward are more prone to develop unipolar non-melancholic depression than men with a considerable gender gap in middle life.

This study also identified that the highest incidence rate for depression among women was found in the perimenopausal age band (40–49 years) and the lowest rate in the postmenopausal age band (60–69 years). These findings are in line with earlier studies showing an increased risk of developing depressive symptoms including first onset of MDD during the menopausal transition. Some studies have indicated that it may be the fluctuations in the hormonal milieu in women which carries the depressogenic effect (Bogren et al. 2018).

A common question that arises is whether these differences are true differences or they reflect the differences in the way men and women experience and cope with depression.

Reporting Biases and Threshold for Caseness

Some researchers have been concerned that the sex differences in depression result from men's unwillingness to admit to and seek help. A study looking at how diagnostic criteria influenced the sex ratio in depression identified that men report fewer depressive symptoms than women, in spite of equal social impairment. Men also forget, with time, the frequency of their depressive manifestations, tend to reduce the duration, and also reduce the number of symptoms. Therefore, men report less explicitly on current and even less on earlier depressive episodes.

Women also tend to report sleep, appetite, anxiety, and somatic symptoms more often than men, and thus inclusion of gender-dimorphic items in rating scales and diagnostic algorithms will also influence the depression rates.

Course of Depression

Studies suggest that earlier onset, more chronic and recurrent episodes of depression in women may contribute to lifetime prevalence rates which have been consistently higher among women.

Help-Seeking Behavior

Men seek mental health help far less often than women, and those who do are less likely to be appropriately diagnosed, i.e., women are more likely to be diagnosed with MDD than men, even when they score the same on a standardized diagnostic instrument. This indicates that clinicians may have an unconscious gender bias in their diagnostic judgment. Instead of directly expressing their sadness, depressed men may channel their negative emotions into externalized behaviors, such as yelling, violence, and substance abuse.

Psychopathology

A systematic review of studies looking at gender differences in expression of depression revealed that depressed women reported higher frequency and intensity of symptoms that were included as standardized key diagnostic criteria for depression, whereas depressed men reported higher frequency and intensity of substance use, increased risk taking, and poor impulse control that were not included as part of commonly used diagnostic criteria. These symptoms may exacerbate depression, impede help-seeking, and reduce the effects of depression treatment and also present a physical danger by increasing the risk of accidents and suicide (Cavanagh et al. 2017).

Depressed women reported symptoms that relate to mood and to metabolic and physiological processes at a higher frequency and intensity, including appetite disturbance and weight change, sleep disturbance, fatigue and loss of energy, depressed mood, diminished interest and pleasure, and sexual disturbance and loss of libido (Schuch et al. 2014; Cavanagh et al. 2017).

Women with depression report more atypical symptoms than do men, mainly increased appetite and hypersomnolence. They are also more likely to experience somatic symptoms such as low energy, fatigue, and pain. It is noted that comorbidity with other internalizing disorders is higher among women than among men (Blanco et al. 2012; Schuch et al. 2014). Comorbid anxiety is also more common in women with depression in the earlier ages.

Hormonal Factors

Premenstrual dysphoric disorder (PMDD) and depression in pregnancy and postpartum period have a relation to the cyclical changes in estrogen, progesterone, and other hormones.

Vulnerability and Coping

Certain psychosocial factors such as multiple responsibilities, unequal power status, and vulnerability to sexual and physical abuse are known to predispose women to depression, contributing to the gender gap. Social roles and cultural norms which

include gender-specific demands posed by marriage, such as looking after children, have been associated with greater risk for depression, while women entering the job market face economic discrimination, inequality, role overload, and role conflict posed by concurrent responsibility of household chores and childcare.

Classificatory Systems and Gender in the Context of Affective Disorders

Despite multiple studies focusing on gender and evidence from clinical experience to the contrary regarding gender differences in depressive disorders, DSM-5 states “there are no clear differences between genders in symptoms, course, treatment response, or functional consequences.”

Another significant change in DSM-5 which requires attention was to eliminate the category – mixed anxiety and depression (MAD) – and use specifiers of anxious distress in depression. Early research studies suggested that non-specific symptoms of anxiety and depression are common for which MAD was introduced as a new clinical syndrome in the ICD-10 (World Health Organization 1992) and appendix of DSM-IV. It has implications especially for women because perinatal depression is often associated with anxiety symptoms and frequently justifies a mixed anxiety and depression diagnosis.

This syndrome has also been relevant in primary care, and including this may help patients get early treatment to reduce distress and dysfunction and prevent exacerbation to a more serious psychiatric disorder. Studies have noted that MAD group was significantly associated with many potentially clinically relevant validators, including childhood adversity, poor parenting, lifetime traumas, recent life events, high neuroticism, comorbid substance use disorders, and familial aggregation. On the other hand, the predominant concern leading to exclusion of this category from DSM-5 is the possible increase in false-positive diagnoses.

This category has been retained in the ICD-11 draft, which we believe will be beneficial in the early identification, treatment, and further research into diagnostic stability and treatment of this common mental disorder.

Specifiers such as peripartum onset, atypical features, mixed features, and anxious distress are prominent features in women with mood disorder and help include men and women with variations in presentation of depressive symptoms. These specifiers have clinical utility in planning treatment and monitoring response (Cooper 2017).

As discussed above the expression of psychopathology, treatment-seeking, and etiopathological processes differs between men and women, hence the need for gender-sensitive diagnostic assessments for depression which should also be reflected in classification.

Bipolar Affective Disorders

Unlike unipolar depression, in bipolar depression the received wisdom is that there are no major gender differences. There is an unspoken assumption that an equal sex

incidence in bipolar disorder is an indication that there are no significant differences between men and women.

Incidence, Course, and Psychopathology

The incidence of bipolar I disorder is approximately equal in men and women. Some studies with clinical samples have reported findings that bipolar II disorder may be more common in women than men. Some studies with clinical samples report that women with bipolar disorder experience fewer manic episodes and more episodes of depression compared to men with bipolar disorder. Women have a rapid cycling course and experience more mixed mania.

Bipolar disorder in women appears to remain unrecognized and untreated for a longer period of time than in men, with a mean delay in treatment of 11 years versus 6 years in men, possibly due to more depressive episodes among women.

It is also well known that the reproductive cycle has an impact on bipolar illness (this has been dealt in detail in a separate section of this chapter).

In the classificatory system, the inclusion of the specifier of peripartum onset for bipolar disorder is a progressive change in both DSM-5 and ICD-11. There is scope for improvement in the classificatory systems to include better gender-specific clinical presentations that may influence sensitive diagnoses and management.

Anxiety and Somatoform Disorders

It has long been held that women report more functional somatic symptoms than do men. A review of the literature suggests that women somatize more than men. Wool and Barsky in their paper suggest five possible mechanisms which may contribute to this phenomenon. These include gender differences in the willingness to admit discomfort; the readiness to seek medical attention; the prevalence of psychiatric disorders such as depression with prominent somatic features; innate differences between men and women in their threshold, tolerance, and sensitivity to minor bodily sensations; and differences in psychosocial stress (Wool and Barsky 1994).

Women seem to experience more frequent, more numerous, more intense bodily symptoms than men. This gender difference is likely affected by myriad of factors; however, an overview of this complex literature suggests at least three key factors which contribute to the gender differences.

First, women have a higher prevalence of common psychiatric disorders, particularly anxiety and depression, where somatic features are prominent symptoms. Second, women have higher rates of abuse and trauma, which in turn are associated with medical help-seeking and somatic symptom reporting. Third, women and men seem to differ in their thresholds for judging and considering a given sensation to be noxious, unpleasant, and bothersome (Barsky et al. 2001).

The DSM-5 and ICD-11 have modified the diagnostic criteria to improve the clinical utility of this category. DSM-5 has renamed the category somatic symptom disorder, while ICD-11 has renamed it bodily distress disorder. This is also a

category where despite culture and gender having a strong influence on presentations of this disorder, the focus on this has been minimal in both classificatory systems.

Classificatory System and Somatoform Disorders

Somatoform disorder is a diagnosis with strong gender bias to the extent that women patients who express emotional difficulties are often viewed as histrionic or somatizing. In women, clinicians seem quicker to conclude non-specific symptoms as having no medical explanation, and they are more often ascribed to psychosocial causes. Studies suggest that women receive less severe medical assessment of chest pain and inadequate treatment of pain symptoms.

We suggest that the classificatory system should use a gender-neutral approach with an opportunity to enlist the psychological factors contributing to the condition. Since many symptoms described are male- or female-specific, separate gender-specific thresholds are to be considered. One of the solutions on how to fix threshold could be by coding for the “core” syndrome, which is the same in both sexes and uses gender and its associated factors as specifiers (Riecher-Rössler 2010).

Neurodevelopmental Disorders

Autism Spectrum Disorders (ASD)

Prevalence

One of the most striking features of ASD is the high male-to-female ratio, which averages at approximately 4:1 but rises to approximately 10:1 in “high-functioning autism” or Asperger syndrome and drops to 2:1 in individuals with comorbid moderate-to-severe intellectual disability (ID).

It is also possible that the high sex ratio in ASD reflects, in part, bias in the diagnostic criteria currently used or in the way these criteria are applied to recognize ASD in practice. If clinicians find it harder to recognize some or all manifestations of ASD in girls compared to boys, this would contribute to the reported high male-female ratio.

The current diagnostic criteria, concepts, or practices are somewhat biased toward the male presentation of social and communication impairments and restricted repetitive behaviors interests, which contributes to girls with ASD being easily missed in the diagnostic process.

More subtle forms of ASD may be difficult for clinicians to recognize in girls than in boys, particularly in the presence of average-range IQ and without behavioral problems. Studies have noted that males are substantially overrepresented among high-functioning cases and males and females are more equally represented among cases with severe ID (Werling and Geschwind 2013).

Presentation of ASD Symptoms and Related Phenotypes in Girls and Boys

Higher proportion of girls with autism is diagnosed with ID as compared to boys. Many studies find no sex differences in overall composite ASD severity as measured on several standard assessment tools suggesting that girls are not more severely affected. However, differences emerge when each core symptom domain of ASD is considered separately.

Internalizing Versus Externalizing

Boys with ASD are found to show more aggressive behavior, hyperactivity, reduced prosocial behavior, and increased repetitive/restricted behaviors and interests compared to girls. Overall, boys with ASD have more externalizing behavior problems, while girls with ASD show greater internalizing symptoms such as anxiety, depression, and other emotional symptoms (Hattier et al. 2011).

Diagnostic Masking

The observed sex differences raise the possibility that male-typical externalizing behaviors are more disruptive in the home or school setting than female-typical internalizing behaviors, preferentially prompting evaluation and diagnosis for boys. High-functioning girls, who present with more socially acceptable behaviors such as being quiet and introverted and developing strong interests in books and dolls, often go unnoticed. Those presenting for evaluation early often have comorbid ID.

Girls also present with stronger imaginative play, more interest in social relationships, and more socially acceptable special interests (such as horses, dolls, pop stars). Girls who do not receive a diagnosis of ASD show more communication difficulties but also show reduced social impairments compared to non-diagnosed boys. These differences could be due to different genetic variants and/or influence of environmental factors.

Hiller et al. (2014) in their paper summarize reasons why ASD may be difficult to detect in girls:

- Behavior of girls at school may seem less impaired or concerning than that of boys.
- Girls show fewer and random restricted, repetitive behaviors.
- Girls are better able to regulate their behavior and adjust to a variety of settings.
- Girls have better imaginative play.
- Girls seek out friendships, even though they have trouble maintaining them.
- Girls retain their ability to engage in conversations, share their interests, and use gestures (Hiller et al. 2014).

Classificatory System for ASD

The gender differences in prevalence of autism spectrum disorders have been described in DSM-5, also mentioning regarding challenges of the current classificatory systems in diagnosing subtle signs of ASD in women or girls with normal IQ.

This is another category which may require separate thresholds for symptoms for ASD in boys and girls. A tailor-made gender-specific diagnosis will be useful in diagnosing girls with high-functioning autism so as to pick up the subtle symptoms which do not overlap with symptoms in boys.

Attention Deficit Hyperactive Disorder (ADHD)

In comparison to ADHD boys, ADHD girls have lower ratings on hyperactivity, inattention, impulsivity, and externalizing problems. In addition, ADHD girls have also been shown to have greater intellectual impairments and more internalizing problems than ADHD boys (Gershon and Gershon 2002).

Girls with ADHD represent a “silent minority,” as a result of their manifestation of the disorder. Specifically, since girls with ADHD display less disruptive behavior and more inattentive behaviors than boys with ADHD, they are less often diagnosed.

ADHD clinics typically receive a higher number of referrals for boys due to their greater likelihood of disruption in settings such as school. Thus, clinically referred girls are more likely to exhibit disruptive behaviors, but may not be representative of most girls with ADHD.

True Differences Versus Diagnostic Bias

Even after accounting for gender differences due to issues of selection bias, measurement invariance, and the possibility that particular symptoms such as greater intellectual impairment which better characterize ADHD in girls are missing from the diagnostic criteria, Arnett and colleagues have identified boys have more childhood ADHD symptoms than girls (Arnett et al. 2015).

As hyperactive-impulsive symptoms are more characteristic of boys than girls with ADHD, an age-related reduction in hyperactive-impulsive symptoms would proportionately affect the prevalence of ADHD in adult men compared to women (Narrow et al. 2007).

Therefore, ADHD in males may decline with age due to reductions in the hyperactive-impulsive symptoms that are more likely to characterize their disorder, while females with ADHD remains relatively stable, by virtue of being less likely to be characterized by hyperactive-impulsive symptoms.

Gender and Classificatory System in ADHD

The current diagnostic criteria are disproportionately appropriate for children compared to adults and for males compared to females (Owens et al. 2015).

Perhaps because the diagnostic criteria for ADHD was largely developed from samples of male children, their use results in underdiagnosis and underrepresentation when applied to adults of both genders and in girls. We suggest a gender-specific approach with common core symptoms and using different diagnostic thresholds for both genders to improve both research and clinical utility of these diagnostic criteria with the understanding that age and gender interact in the manifestation of symptoms of ADHD.

Disorders Related to the Reproductive Cycle

Women's reproductive life includes pregnancy, postpartum, premenstrual, and perimenopausal periods. These periods are characterized by ovulation-related hormonal cyclicity as well as associated events like pregnancies, deliveries, and motherhood and the process of secession of menstrual cycles and fertility. The periods of reproductive transition are a high-risk period for the onset and exacerbation of psychiatric illness. Studies suggest that sudden estrogen withdrawal, fluctuating estrogen, and sustained estrogen deficit may induce mood and anxiety disorders in estrogen-sensitive women.

In this section, we discuss the presentations of various psychiatric disorders associated with menstrual cycle and pregnancy and discuss their influence on classification.

Premenstrual Dysphoric Disorder (PMDD)

Premenstrual syndrome refers to physiological, psychological, and behavioral changes repeatedly occurring in the luteal phase of the female reproductive cycle and remitting shortly after the onset of menses, causing distress, and disturbing everyday functioning and interpersonal relationships and associated with significant social and professional impairment (Freeman 2003).

Premenstrual symptoms are a broad category encompassing disorders of the same nature with varying severity. In about 20% of women, symptoms are severe enough to require treatment (Halbreich et al. 2007). Approximately 8% of women at the severe end of premenstrual symptomatology experience PMDD with severely emotionally debilitating symptoms (Halbreich et al. 2007).

The existence of premenstrual syndrome has been long known (Greene and Dalton 1953); however, it has not so far received the attention it deserves, taken into consideration that it disturbs not only everyday life and relationships and causes significant burden as well as significant economic losses (Halbreich et al. 2003).

It was only in 1987 that criteria for a late luteal phase dysphoric disorder (LLPDD) were proposed and published in the Appendix of DSM-III-R. LLPDD was considered a subset of premenstrual syndrome, where the women suffer from mood, cognitive, and physical symptoms in the luteal phase of her menstrual cycle. This triggered debates as several researchers felt that this was pathologizing normal emotions of women, leading to significant false positives and reinforcing the common negative attitude toward menstruation.

A study to determine symptom types and patterns in 180 women with LLPDD identified negative affect, physical symptoms, agitation, and positive arousal as the key areas (Rivera-Tovar and Frank 1990). Subsequently, the term PMDD was adopted and listed as an example of "depressive disorder not otherwise specified" in DSM-IV. The research criteria for the diagnosis were given in the appendix. The work group behind these changes had undertaken an extensive review of the

literature up to 1993 and reached good agreement on the proposed diagnostic criteria for PMDD.

The ICD-10 lists “premenstrual tension syndrome” as a physical disorder under “pain and other conditions associated with the menstrual cycle” (World Health Organization 1992).

Due to inclusion of PMDD in the research appendices of the DSM-III-R and DSM-IV, a great deal of research was stimulated, which has established its validity and reliability.

PMDD has now found a place in both the DSM-5 and the ICD-11 draft and is included under depressive disorders. Another change in the DSM-5 is the inclusion of “provisional” if the diagnosis was made retrospectively and the need for a prospective assessment of two symptomatic cycles to confirm diagnosis.

The argument for moving PMDD to a full-fledged diagnosis in the DSM-5 and ICD-11 is that clinical as well as epidemiological studies suggest that PMDD is a chronic condition and some women may experience severe mood symptoms that begin during the luteal phase and terminate with the onset of menses. There is also considerable stability in the course of PMDD from cycle to cycle and over time in the absence of treatment. Very often women with PMDD experience impaired functioning in various domains which improves with treatment (Halbreich et al. 2003). Without clear diagnostic boundaries for PMDD, symptoms may be dismissed or mistaken for a mood disorder, and having more stringent criteria will also ensure that overdiagnosis does not occur (Epperson et al. 2012).

Despite several positive changes in the definition of PMDD, few unresolved issues such as the dichotomy between the physical and mental symptoms are not clear. There is also insufficient evidence to support PMDD as an extreme form of PMS. There is further scope for improvement in classificatory system to capture the diversified phenotypes (e.g., women who report positive mood changes) and report severity on a continuum. This might help us reduce false positives and identify the women who warrant treatment.

Peripartum Disorders

Psychiatric disorders during childbirth have been recognized for many hundreds of years. In the traditional view, three postpartum disorders – the maternity blues, puerperal psychosis, and postnatal depression – have been described, but further studies have revealed a wider range of disorders (Brockington 2004).

The strongest and best-established risk factor for susceptibility to postpartum psychosis is a history of bipolar disorder or previous severe postpartum episodes (Jones et al. 2014). The episodes of mood disorder occurring at peripartum period are of great clinical and public health importance with suicide, a leading cause of maternal death in developed countries and emerging as a leading cause in developing countries (Fuhr et al. 2014). There is a strong temporal relationship of peripartum disorders to bipolar affective disorders. Studies suggest that bipolar women have at

least a one in four risk of suffering a severe recurrence following delivery (Jones and Craddock 2001).

Psychopathology

Bipolar women with a previous history of a severe postpartum episode and bipolar women with a family history of postpartum psychosis are at particularly high risk (Jones and Craddock 2001). The presentation of bipolar episodes in the postpartum period shows some differences, with mixed episodes, dysphoric mania, a rapidly changing “kaleidoscopic” clinical presentation, and perplexity and confusion being more prominent (Brockington and Guedeney 1999). Therefore, there is a clear justification for recognizing this very strong relationship between bipolar spectrum disorders and childbirth in the classification systems.

Peripartum Disorders in Classificatory Systems

Perinatal psychiatrists have recommended several changes in both the ICD and DSM to enhance the early detection of perinatal psychiatric disorders and to make it more clinically relevant and in keeping with advancement in science and policy (Austin 2010).

These include:

1. Enhancing the time frame of the onset specifier to include all mood disorders occurring in the first 6 months postpartum, rather than a restrictive time frame of 4 or 6 weeks and specifically mentioning early- and late-onset disorders.
The rationale for extending the postpartum onset specifier to 6 months for mood disorders was that it would enhance the recognition and treatment of mental health problems in the 1st year after childbirth which has significant impact on the mother and infant. This would ensure that the diagnosis will not be restricted to a small number of new episodes starting within 4–6 weeks postpartum. The 6-week specifier for both depression and psychoses could be used mainly for biological research.
2. Removal of the “Disorders associated with physiological disturbances and physical factors” category and the “not classified” descriptor in the ICD-10 which would bring postpartum disorders into the mainstream, more in line with the DSM.
3. Research has suggested that psychiatric disorders compromise maternal sensitivity during mother-infant interaction and that the disturbance is associated with poorer child outcomes and increases the risk of disturbance in child development (Nicol-Harper et al. 2007).
One of the recommendations is to also consider a code for mother-infant interaction difficulties to help clinicians and policymakers consider the impact of maternal mental illness on the infant and make adequate service provisions.
4. Two other strong recommendations were to include pregnancy as an onset specifier and to use the word perinatal rather than postpartum.

5. Increasing body of research shows that a proportion of women experience significant symptoms of post-traumatic stress disorder (PTSD) following childbirth, with a high degree of overlap with depression and has a chronic course.

It was also recommended that childbirth-related trauma be included in the types of trauma for post-traumatic stress disorder (PTSD) in the DSM-5, at least as an onset specifier. This was considered important for better recognition of the disorder and better education regarding obstetric care (Condon 2010).

Some changes have been made to PPDs in both classificatory systems, but they are obviously not enough. A major positive change has been the inclusion of pregnancy as an onset specifier for several conditions in both DSM-5 and ICD-11. However, disappointingly, the duration criteria remain the same and are restricted only to 4 or 6 weeks postpartum (DSM-5 and ICD-11). Mother-infant interaction disorders have not been included (even as a category requiring further research), and childbirth trauma does not appear in the section on PTSD.

ICD-11 continues to have a category of “Mental or behavioral disorders associated with pregnancy, childbirth, and the puerperium, not elsewhere classified” with or without psychosis. However, a category of postpartum depression has been added in the latest draft of ICD-11.

ICD-11 has included perinatal onset as a specifier in mood disorders which has not been specified for rest of the psychiatric disorders. This should have ideally been replaced by a perinatal specifier in all psychotic and anxiety disorders like in DSM-5, for better diagnosis, identification, and management.

Menopause

Menopausal transition, or “perimenopause,” is a period of time beginning with the onset of irregular menstrual cycles until the last menstrual period, and this period is marked by fluctuations in reproductive hormones.

Although most women transition to menopause without experiencing psychiatric problems, about 20% experience depression at some point during menopause. There are wide variations in presentation of depression in menopause and cognitive symptoms; paranoia and irritability may be marked in perimenopausal depression compared to symptoms of major depressive disorders seen in men or younger women (Kulkarni 2018).

Current research suggests that perimenopausal depression has a unique presentation and treatment response and possibly a unique pathophysiological process which requires a tailored intervention.

A question to be addressed would be whether inclusion of a specifier for perimenopausal depression would improve further research and better targeted treatment of this condition or increase rates of false positives?

Course of Psychiatric Disorders During Menopause

A second peak in the incidence of schizophrenia is noted among women aged 45–50 years. Some studies have observed a worsening of the course of schizophrenia in women during the menopausal transition. These observations may suggest that estrogen plays a modulatory role in the pathophysiology of schizophrenia. Research suggests that menopausal women may also become less responsive to antipsychotics. Recent studies have found promising results with estrogenic compounds and selective estrogen receptor modulators (e.g., raloxifene) to augment antipsychotic medications in both pre- and postmenopausal women (Kulkarni et al. 2008).

Research has suggested that women with bipolar disorder have higher rates of depressive episodes during the menopausal transition (Marsh et al. 2008). In the context of anxiety disorders, new-onset panic disorder may occur during menopause, or pre-existing panic disorder may worsen. Panic disorder may be most common in women who predominantly have physical symptoms of menopause.

Women in the perimenopause are a vulnerable group; they may show distinct psychopathology, have a worsening of symptoms, have an onset of illness for the first time, and may respond differently to treatment and be prone to more side effects.

In order to address the unique needs of this population, we suggest the inclusion of a specifier of “onset or worsening of illness in menopause” which may be beneficial to improve descriptions of perimenopausal conditions and also help research into newer treatments.

Trauma-Related Disorders: Complex Post-Traumatic Stress Disorder (cPTSD)

There has always been a question about the ability of the standard DSM definition of PTSD to capture the full range of trauma-related psychopathology. Critics have argued that it misses a distinct but important clinical syndrome identified originally in survivors of prolonged childhood sexual trauma, termed complex PTSD (Wolf et al. 2015).

cPTSD is described as a post-trauma syndrome characterized by problems in the domains of interpersonal relationships, somatization, affect regulation, dissociation, and sense of self. A variation of this construct, called “disorders of extreme stress, not otherwise specified,” was proposed for inclusion in DSM-IV. However, it was rejected due to concern about its overlap with PTSD and borderline personality disorder (Resick et al. 2012).

DSM-5 also does not have this category but has a new dissociative subtype of PTSD. Pervasive negative mood, distorted negative cognitions, and reckless behavior, which may align with some conceptualizations of cPTSD, have been added to the DSM-5 criteria (Friedman 2013).

ICD-11 has however proposed a new category termed “disorders specifically associated with stress,” which would include a narrowly defined (six-symptom) PTSD diagnosis and a new cPTSD diagnosis, conditional on the presence of PTSD.

cPTSD has been proposed as a diagnosis for capturing the symptom clusters observed in survivors of chronic trauma that are outside the current definition of PTSD (Resick et al. 2012).

A study by Roth et al. suggested that sexually abused women, especially those who also experienced physical abuse, had a higher risk of developing cPTSD (Roth et al. 1997).

cPTSD symptoms manifest as alterations in numerous basic psychobiological processes associated with affect regulation (impulsivity, self-harm), attention and consciousness (dissociation), self-perception (shame, guilt), relationships with others (mistrust), somatic functioning (psychosomatic pain), and meaning in life (despair at future) (Ford 2015).

Studies suggest that cPTSD is distinguishable from personality disorders by its restricted symptom profile and its responsiveness to treatments that differ from those for personality disorders and PTSD.

While it is to be seen how often this diagnosis is made and accepted by clinicians, the fact that it is recognized and described will ensure that women who are often victims of multiple traumas are not labeled as personality disorders and are also able to access more trauma-based interventions.

The argument that cPTSD is an amalgam of PTSD and borderline personality disorder (BPD) has been due to reports of the relatively high comorbidity between PTSD and BPD (Pagura et al. 2010). BPD differs from cPTSD that it does not require a traumatic stressor for diagnosis and PTSD symptoms may or may not be present. Rather, BPD is characterized by fear of abandonment, shifting self-image or self-concept, shifting idealization and devaluation in relationships, and frequent impulsive and suicidal behaviors. Complex PTSD, as proposed in ICD-11, highlight chronic avoidance of relationships rather than sustained chaotic engagement. While emotion regulation difficulties are central to both cPTSD and BPD, their expression is quite different. In cPTSD they predominantly include emotional sensitivity, reactive anger, and poor coping responses (e.g., use of alcohol and substances).

Personality Disorders

Personality disorders differ in prevalence by gender. The most striking findings concern antisocial personality disorder, which is more common in men, and borderline personality disorder (BPD), which is more common in women.

DSM-IV-TR states that BPD is “diagnosed predominantly (about 75%) in females.” A 3:1 female to male gender ratio is quite pronounced for a mental disorder and, consequently, has led to debates and speculation about the possible cause and to some empirical research.

A majority of the literature on BPD focuses on its occurrence in women or does not specifically assess for gender differences in clinical presentations.

Some studies report that men with BPD have been more likely to be diagnosed with substance use disorders, passive-aggressive, narcissistic, paranoid, sadistic, and antisocial personality disorders (PDs). Additionally, women with BPD appear to be

more likely to report histories of adult physical and sexual abuse and to meet diagnostic criteria for post-traumatic stress disorder (PTSD) and eating disorders. Women with BPD were more likely to have co-occurring diagnoses of PTSD and eating disorders, while men were more likely to have co-occurring diagnoses of substance use disorders, as well as schizotypal, narcissistic, and antisocial PDs. Additionally, proportionally more women than men meet the borderline diagnostic criterion for identity disturbance.

Zanarini et al. hypothesized that the gender differences found in BPD may be a function of impulsivity, in that men and women may differ in the specific type of “disorder of impulse” that they predominately display. For example, women may be more likely to use food (i.e., internalizing behaviors) and men alcohol or drugs and acting out against others (e.g., externalizing behaviors) in a self-destructive manner. Childhood abuse, in general, and childhood sexual abuse, in particular, have long been hypothesized etiological components of BPD, most notably in women (Zanarini et al. 1997). BPD is yet another condition where it is observed clinically that the threshold for pathologizing is lower for women than for men. There is also an overlap of the presentation with mood disorders and trauma-related disorders, which frequently results in overdiagnosis of BPD among women.

Gender and Classificatory Systems in Relation to BPD

The classificatory system should take a dimensional approach rather than categorical, with an opportunity to grade severity. With men, often being misdiagnosed due to difference in presentations, the classification of BPD should take into account the differential effects of gender expression, and a gender-specific approach in classificatory systems would be helpful. Women are often overrepresented in research studies in BPD; hence, more studies looking at presentation of men with BPD will be useful.

Eating Disorders

Eating disorders (EDs) are diagnosed more frequently in women than men, and have been typically constructed as a woman’s disorder. ED presentations differ across gender, as men are more likely to report overeating, while women are more likely to present with loss of control while eating. Studies suggest that women have higher scores for ED behaviors such as drive for thinness, bulimia, and body dissatisfaction compared to men.

Men are also less likely to seek ED treatment services and are also less likely to be diagnosed with an ED if they do seek help for psychological difficulties. Men have reported difficulty in disclosing ED problems as the admission of being a male with an ED does not fit with the traditional societal perceptions of EDs as occurring only in women.

Men are reluctant to seek help; there exists a lack of awareness among clinicians and underdiagnosis of EDs in men.

Under-identification and underdiagnosis of EDs in men may also be due to use of physical measures (such as body weight and body mass index (BMI)) for assessment and weight as an important criterion for ED diagnosis. Men who typically lie on the elevated side because of body musculature are often missed.

Recognition and tailored treatments of EDs that are transformed by gendered perspectives, including those of the non-dominant and vulnerable groups (men and transgender), need more detailed consideration (Thapliyal et al. 2017).

Gender and Classificatory System in ED

ICD-11 and DSM-5 in their newer approach of classifying eating disorders have not only expanded to include feeding disorders of infancy and childhood but have changed the clinical criteria required for the diagnosis based on the available evidence.

Anorexia nervosa (AN) has been redefined, and terms such as “denial, refusal, and self-induced” – terms which lack evidence and also convey a paternalistic attitude – have been removed. ICD-11 criteria are based on clearly observable behaviors and cognitions. ICD-11 provides a definition of “a significantly low body weight” for adults ($\text{BMI} < 18.5 \text{ kg/m}^2$; WHO), while DSM-5 perceives “restriction of energy intake relative to requirements” as a core aspect of the disorder. The provision of thresholds is important in increasing the diagnostic reliability.

Both ICD-11 and DSM-5 have moved away from fear of weight gain and fat phobia being a necessary criterion for the diagnosis of AN, by including the phrase “engagement in persistent behavior that interferes with weight gain” as an alternative. There is evidence that non-Western and younger patients are less likely to express fear of gaining weight or fear of fatness, making the new criteria more culture neutral and improving the cross-cultural validity. ICD-11 now also avoids any reference to the symptoms of starvation and the associated endocrine disturbances; however, this may be considered inappropriate as symptoms of starvation separate females with AN from constitutionally underweight females. In light of attempts to define biological markers for mental disorders, the nonrecognition of endocrine alterations associated with anorexia nervosa including hypoleptinemia has been thought to represent a step backward.

Binge eating disorder has a separate category and definition in ICD-11, which is considered a positive move as this would avoid the overuse of the criteria “eating disorder unspecified.” In ICD-11 and DSM-5, ED-NOS was considered to be heterogeneous and unhelpful.

ICD-11 has included pica, rumination disorders, and a new criterion on avoidant-restrictive food intake disorder (ARFID) along with other eating disorders. The growing evidence on continuity between child, adolescent, and adult psychopathology supports this move. ARFID have a place for women with restricted eating patterns in pregnancy leading to problems in weight gain and nutritional deficiency.

Conclusions

An ideal classificatory system in psychiatry should adopt a gender-based approach, i.e., the diagnostic categories should be equally applicable to both genders, and if differences are present between men and women, the social and biological influences of sex/gender must be highlighted.

Research into this would give us better insights if gender differences in prevalence of psychiatric illness are true or artifactual.

Few suggestions on how a gender-based approach can be applied to the classificatory system have been summarized below:

- (a) Gender-specific thresholds – using different clinical thresholds for men and women (e.g., somatoform disorders, depression).
- (b) Gender-specific diagnosis – there has always been a debate if gender-specific diagnosis such as postpartum depression, mother-infant interaction disorders, premenstrual disorders, and perimenopausal disorders are valid entities, with symptomatology and course and etiology differing from other forms of other depression and anxiety disorders. While there is inadequate evidence for these conditions being separate entities; childbirth and gender have a pathoplastic influence and would require specific assessments, treatment approaches and research into etiological factors, hence the need for a separate diagnosis or a specifier in the classificatory system.
- (c) Gender-sensitive approach can be used when a specific situation has a pathoplastic effect (e.g., perimenopausal psychiatric disorders) (Riecher-Rössler 2010).

Finally, it is evident that that inclusion of the influence of gender in classificatory systems will not only improve knowledge of mental illness and help research into etiological factors but also ensure delivery of gender-sensitive services and treatment.

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