

# Prescribing for Women in Corrections

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Prescribing for women in jails and prisons requires special consideration and should be informed by extant evidence. Incarcerated women have higher rates of mental illness than both females in the community and incarcerated men. Medication administration concerns that may disproportionately affect female prisoners include drug–drug interactions with contraceptives, intermittent dosing schedules, and concerns about metabolic side effects. Further, pregnancy, lactation, and menopause may all affect medication choices. Incarcerated women frequently have comorbid mental illness, substance use disorders, and personality disorders. Finally, specific disorders, such as posttraumatic stress disorder, are more common in this population and merit special consideration for recognition and treatment.

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The Practice Resource for Prescribing in Corrections, published by the American Academy of Psychiatry and the Law in 2018, highlights the research specific to prescribing medication for mental health problems to patients in jails and prisons, as well as the operational differences that may influence prescribing in these settings.<sup>1</sup> Some groups within the correctional population have characteristics that require special consideration when prescribing.

Among adult inmates, the largest of these groups may be women. While the number of men in these settings has always dwarfed that of women,<sup>2</sup> at the end of 2015 there were 200,000 women incarcerated in the United States in municipal, state, or federal correctional institutions,<sup>3</sup> with the growth of this population far outpacing that of men.<sup>4</sup>

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Certain mental health problems, including depression and anxiety, are more common in women in general,<sup>5</sup> related to both biological and social factors. For example, women are more likely than men to be exposed to poverty, discrimination, unequal social expectations (such as the care of children and other family members), and trauma, including both physical and sexual violence.<sup>5</sup> Unsurprisingly, incarcerated women have higher rates of common mental health problems than both their counterpart men and women in the community, as well as higher rates of comorbidities.<sup>2</sup>

Prescribing for this group is challenging. A recent study in England found that incarcerated women were nearly three times more likely to be prescribed psychotropic medication than incarcerated men, and about a third of these women were prescribed medication for off-label indications (if an indication was listed at all).<sup>6</sup> Another recent study found that more than half of the women in a U.S. correctional institution were prescribed psychotropic medications from more than one category.<sup>7</sup> Incarcerated women who are prescribed medication are not uniformly positive about the experience; they often perceive taking medication as stigmatizing and giving up control of one's life.<sup>7</sup> Even though women in jails and prisons may be prescribed more psychotropic medication than men, they may be less likely to adhere to these treatments.<sup>8</sup>

As is the case for all incarcerated individuals, the goal for mental health providers working in jails and

prisons is to provide the quality of care that should be available for these patients in the community.<sup>9</sup> This does not mean that male and female inmates should receive identical services. Rather, providers must be sensitive to and prepared to identify and address the specific treatment needs of women.

The purpose of this article is to discuss unique factors in prescribing for incarcerated women, with a focus on the available research on this population. This article omits specific matters that are addressed in the AAPL document (e.g., informed consent, medication education, treatment adherence, and side-effect management) unless there are significant gender differences. Any opinions and recommendations expressed here are solely those of the authors and should not be interpreted as a practice guideline.

### Medication Administration Concerns

When prescribing medications in correctional settings, clinicians must consider several variables, including formulary restrictions, laboratory processes, dispensing schedules, medication availability, adherence, and misuse (including abuse and diversion) by inmate patients. Newer medications may not be available or may require a justification process. Limited access to laboratory studies and medical tests may influence prescribing practices. Similarly, the need to dispense crushed or liquid formulations to ensure adherence or to minimize diversion may influence medication choice.<sup>10</sup> The practicality of intermittent dosing schedules, the concomitant use of hormonal contraceptives and psychotropic medications, and concerns about weight gain are additional challenges in prescribing to incarcerated women.

Developmental disabilities are not uncommonly observed in female inmates. According to the Bureau of Justice Statistics, more women (30%) than men (19%) prisoners report a cognitive disability (e.g., difficulties with problem solving, reading, comprehension, attention, or memory).<sup>11</sup> Such challenges may pose a barrier to medication administration, for example if the patient erroneously believes that medication should not be taken during menses. Individual or group medication education can be of great benefit for this group.

### Intermittent Dosing Schedules

In correctional settings, psychotropic medications are typically administered to inmates at specified times during the day. In general, psychotropic med-

ications are not eligible for self-carry programs due to concerns about diversion, hoarding, overdose, and nonadherence.<sup>12</sup> Controlled dosing schedules may make intermittent (i.e., as-needed) dosing impractical, presenting a challenge when treating inmates with premenstrual syndrome or premenstrual dysphoric disorder, conditions often treated with selective serotonin reuptake inhibitors (SSRIs) with luteal-phase only or symptom-onset therapy. Although SSRIs are effective in treating premenstrual symptoms whether taken continuously or intermittently (during the luteal phase only), intermittent dosing has the benefit of fewer adverse effects, and many women prefer this regimen.<sup>13</sup> Prescribers may work with such a patient to chart her cycles and educate her about the correct days to attend the medication line to request the medication, if it is possible in the facility for a medication to be prescribed as needed. Alternatively, a provider may make a plan to allow refusals on non-luteal-phase days, if this is realistic in the specific institution.

### Drug-Drug Interactions

Women in jails and prisons are likely to be of reproductive age.<sup>14</sup> Both women with mental illnesses and those facing incarceration are at increased risk of unintended pregnancy.<sup>15,16</sup> Contraception should therefore be a major consideration in this population, especially when the patient has access to conjugal visits or as she is approaching release to the community.

Some psychotropic medications may induce cytochrome CYP<sub>450</sub> enzymes and thereby reduce the effectiveness of contraceptives. But studies have not reported differences in unintended pregnancy rates when hormonal contraceptives are administered with or without psychiatric medications.<sup>17</sup> Conversely, hormonal contraceptives may inhibit CYP<sub>450</sub> enzymes, leading to higher serum levels of psychotropic agents and increased risk of adverse side effects. Limited data suggest few clinically significant interactions between contraceptives and commonly prescribed psychotropic medications.<sup>18</sup> An exception may be maintenance treatment for opioid use disorder, during which progestin-only contraceptives may be less likely to disrupt treatment.<sup>19</sup> Case reports have associated hormonal contraceptive use with increased clozapine levels, leading to adverse effects including pericarditis, dizziness, and fatigue. Although available data are reassuring regarding the

co-administration of hormonal contraceptives and psychiatric medications, the studies are limited and caution is warranted.

### **Drug Side Effects: Obesity and Weight Gain**

Incarcerated U.S. women are more likely to be obese or overweight than women in the community.<sup>19</sup> Weight gain is common during incarceration, and a meta-analysis reported that women gain more weight than men during incarceration.<sup>20</sup> Incarcerated women cite weight gain as a primary health concern, and unhealthy strategies such as fasting or vomiting are commonly used in efforts to lose weight.<sup>21,22</sup> Factors contributing to weight gain specifically among female inmate patients include eating to relieve stress and to cope with boredom, unhealthy prison diets, access to commissary snacks, and limited physical activity.<sup>22–24</sup> A survey at an Oregon state prison showed that up to 40 percent of female inmate respondents were prescribed a medication known to cause weight gain, and that up to 78 percent were trying to lose weight.<sup>22</sup>

There is no evidence for different adherence monitoring for male and female inmates *per se*. Medication-related weight gain may be one factor leading to nonadherence. To help address this problem, medication selection should be sensitive to body image concerns while acknowledging that it is inappropriate to prescribe an antidepressant (e.g., bupropion or topiramate) solely for the purpose of weight loss.<sup>2</sup> Prescribers working in women's prisons should take metabolic risks into consideration when prescribing psychotropic medications and routinely monitor for weight changes in their inmate patients.

## **Life Phases**

### **Pregnancy**

Five percent of female jail inmates and three to four percent of female prison inmates are pregnant on intake.<sup>25</sup> Psychiatrists should be aware that many states allow shackling or restraint of pregnant inmates, including during delivery, despite the low risk of absconding that typically makes this unnecessary. This practice carries both medical and psychological risks, including an increased risk for falls and miscarriages, less repositioning during delivery, and interference with bonding.<sup>25</sup> Incarcerated women are a high-risk pregnancy group, being more likely to use alcohol, illicit drugs, and tobacco, and being more

likely to come from deprived backgrounds.<sup>26</sup> They are more likely to have a premature or low-birth-weight baby than the general population of women.<sup>26</sup> Incarceration of a woman or her partner within the year prior to birth has been associated with higher odds of both poorer perinatal health behaviors and maternal hardship.<sup>27</sup> Women were less likely to begin prenatal care during the first trimester, more likely to report partner violence, and more likely to need access to the Women, Infants and Children's Program (WIC) or Medicaid.<sup>27</sup> The period of incarceration is thus an important opportunity to intervene for healthier pregnancies. When compared with a similarly disadvantaged population, incarcerated women are less likely to have a low-birthweight baby or a stillbirth, potentially because of increased access to prenatal care during incarceration and relative protection from certain risk factors such as substance use and partner violence.<sup>26</sup>

In the community, approximately 13 percent of pregnant women are prescribed antidepressants.<sup>28</sup> This baseline rate is expected to be higher in pregnant incarcerated women, who face additional stressors, including the potential loss of custody of their baby after birth.

In any setting, prescribers must consider the potential risks of pharmacotherapy during pregnancy, including miscarriage, malformation, preterm delivery, perinatal syndrome, and behavioral teratogenesis.<sup>28</sup> These risks must be weighed against the risks associated with untreated mental illness, such as suicide, violence, and lower utilization of prenatal care. While incarcerated, as in the community, pregnant women should be informed of the risks, benefits, side effects, and alternatives to these medications during pregnancy. Coordination with other professionals (e.g., obstetricians, midwives, and pediatricians) should be sought where possible when treating incarcerated pregnant and postpartum women. For new-onset mild depressive symptoms, a proactive psychotherapy-only approach may be appropriate.<sup>29</sup>

A full review of psychotropic medication use during pregnancy is beyond the scope of this article. In general, SSRIs are first-line antidepressants to prescribe during pregnancy. Among SSRIs, sertraline and citalopram have relatively good safety profiles for the management of depression during pregnancy, whereas paroxetine is not preferred due to a potentially higher risk of cardiac malformations.<sup>28,29</sup> Olanzapine and quetiapine are commonly used dur-

ing pregnancy for schizophrenia and bipolar disorder.<sup>30,31</sup> Polypharmacy should be avoided where possible during pregnancy and postpartum due to the potential for increased risk of adverse outcomes.<sup>28</sup>

### **Postpartum and Breastfeeding**

Screening and treatment for postpartum depression is as important in the correctional setting as anywhere else. The Edinburgh Postnatal Depression Scale is the most commonly used tool to screen for postpartum depression.<sup>32</sup>

Incarcerated women may under-report symptoms of depression for fear of losing access to the baby. In many cases, after delivery, the inmate mother returns to the prison facility and the baby is sent to live with relatives or is put into foster care. Only ten correctional departments in the United States offer mother–baby units (MBUs).<sup>33</sup> Grieving the separation from her infant and the potentially permanent loss of custody may increase the need for mental health services.

While a full review of medications with regard to lactation is beyond the scope of this article, similar considerations to the use of medications during pregnancy apply, such as avoiding polypharmacy. In general, the preferred antidepressant for breastfeeding women is sertraline. Mothers with bipolar or psychotic symptoms are often prescribed olanzapine or quetiapine.<sup>29,34,35</sup> The side effect profile (e.g., sedation impeding the mother's ability to respond to her infant) should be considered carefully when treating a postpartum woman in the MBU. Inmates should be educated about using the medication during lactation and the postpartum period and informed consent should be obtained and documented. The collateral information provided by officers often significantly helps when caring for the mother and her infant in the MBU.

### **Menopause**

With an aging inmate population, more women may experience menopause during incarceration. On average, the menopause transition begins at age 47 years and lasts four to seven years, with most women being postmenopausal by age 55.<sup>36</sup> Among older women in prison, the third most common health concern reported was problems related to menopause.<sup>37</sup>

The risk of depressive symptoms is greater both during and after menopause.<sup>36</sup> Risk factors for depression during menopause include a history of depression, vasomotor symptoms, younger age at onset or surgical menopause, life stressors, and negative attitudes about aging.<sup>36</sup> Symptoms of depression and menopause often overlap (e.g., impairments of energy, sleep, concentration, weight, and libido). Therefore, a careful history is important. While there are no available guidelines to make broad recommendations for dosing modification during menopause, an individual woman's dosage needs may change, potentially related to the loss of estrogen.

## **Practices Related to Specific Disorders**

### **Depressive and Anxiety Disorders**

The rate of major depressive disorder among female prisoners ranges from 10 to 29 percent across various studies.<sup>38</sup> Similarly, in a representative selection of county jails in the United States, the rate of major depressive disorder in female inmates was 22 percent.<sup>39</sup> Detection and management of depression in incarcerated women is important; current depression was the strongest associated risk factor for near-lethal self-harm in a study of female inmates in Great Britain.<sup>40</sup> Rates of various anxiety disorders in female prisoners are also high: up to 12 percent for panic disorder, 12 percent for social phobia, 9 percent for specific phobia, and 7 percent for obsessive-compulsive disorder.<sup>38</sup>

Women in prison in England are prescribed antidepressants more than four times as often, and anxiolytics or hypnotics more than three times as often, as a comparable community sample.<sup>6</sup> As described in the AAPL Practice Resource,<sup>1</sup> careful diagnostic assessment is critical to avoid over- or underprescribing for these problems. When a diagnosis of a specific mood or anxiety disorder can be made, it is appropriate to offer indicated pharmacotherapy. Considering the high rates of comorbid substance use disorders in incarcerated women,<sup>2</sup> it is especially important to first address withdrawal from substances before completing an assessment for mood or anxiety disorders.<sup>1</sup>

### **Bipolar and Psychotic Disorders**

The psychopathology of the most seriously mentally ill inmates is similar regardless of gender.<sup>2</sup> In a representative selection of county jails in the

United States, the rates of bipolar disorder and schizophrenia-spectrum disorders were 8 percent and 4 percent respectively.<sup>39</sup> In female prisoners, the rate of psychosis is similarly observed to be 4 percent,<sup>41</sup> which is only marginally higher than the rate in men (3.7%).

Nevertheless, incarcerated women in England are more than seven times as likely to be prescribed an antipsychotic or mood-stabilizing medication than their community counterparts.<sup>6</sup> Researchers in Connecticut conducted one of the few studies of algorithm-driven treatment on female inmates with bipolar disorder, using the Texas Implementation Medication Algorithm.<sup>42</sup> Results supported this approach to minimize the inappropriate use of antipsychotics, antidepressants, and polypharmacy in this group.

When prescribing an antipsychotic medication, prescribers in women's correctional facilities should be particularly mindful of the risk for metabolic complications. A study of metabolic syndrome among prison inmates prescribed an antipsychotic found a trend ( $p = .11$ ) for a higher rate of metabolic syndrome in women.<sup>43</sup> Among medications used as mood stabilizers, topiramate and lamotrigine are associated with weight loss.<sup>44</sup> Topiramate may be especially sought after by incarcerated women for the management of mood symptoms. Prescribers should recall that topiramate is FDA-approved only for epilepsy, that the available evidence for its mood stabilizing properties is scarce, and that it may cause cognitive impairment and renal stones.<sup>45</sup>

### **Trauma and Stress-Related Disorders**

Up to three quarters of women entering prison report having experienced trauma, which is more than either male prisoners or women in the community.<sup>46,47</sup> Trauma may also occur during incarceration, most often due to victimization by peers or staff.

Posttraumatic stress disorder (PTSD) is the second most common disorder among female prisoners, after substance use disorders, and is more than twice as common in female prisoners as in the community.<sup>46</sup> Incarcerated women have a prevalence of PTSD of 17 to 28 percent across studies, whereas incarcerated men have rates of 9 to 10 percent and the overall community rate is approximately 3 percent.<sup>48–50</sup>

Diagnosing PTSD in correctional settings is challenging. While it may be overdiagnosed in this population because of malingering for damages or medications, it may also be underdiagnosed because a woman may hide her symptoms so as not to be seen as weak or to avoid the possibility of retraumatization.<sup>46</sup> Comorbidities, including substance use disorders and other mental illnesses, are common.<sup>46,48</sup> Further, “complex PTSD” or PTSD resulting from a prolonged severe and repeated trauma may be more common among incarcerated women. This diagnosis is not recognized in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, but it is a proposed category for the World Health Organization's International Classification of Disease, 11th Revision, and it has been in the research literature since the early 1990s.<sup>51–53</sup> In addition to PTSD symptoms, enduring problems in affect and relationships occur, and impulsivity, rapid mood shifts, anger, negative self-concept, and feelings of emptiness may be seen.<sup>54</sup> Although most of the literature is focused on nonpharmacologic approaches to complex PTSD, we suggest a collaborative approach that incorporates evidence-based individual and group psychotherapies, as well as parsimonious pharmacologic management of PTSD and comorbid conditions.<sup>46</sup>

SSRIs and serotonin-norepinephrine reuptake inhibitor (SNRIs) are first-line treatments for PTSD in incarcerated settings; paroxetine and sertraline are FDA-approved, though evidence also supports the use of fluoxetine and venlafaxine.<sup>55</sup> Benzodiazepines may be helpful for agitation and anxiety related to PTSD, but guidelines generally discourage their long-term use for PTSD.<sup>1</sup> Atypical antipsychotic agents, especially quetiapine, are sometimes used off-label in the community as adjunctive medication for PTSD, but they may be misused in prison.<sup>1,46</sup>

### **Substance Use Disorders**

The rate of substance use disorders in female prisoners closely approximates the rate of substance use disorders for male prisoners, and it is significantly higher than the rate for nonincarcerated women.<sup>56,57</sup> Among inmates at intake in 10 countries, the pooled prevalence rate of alcohol use disorders was similar in men and women, although the rate of drug use disorders were higher in women (i.e., 51% versus 30%).<sup>58</sup> Factors related to substance use disorders in

incarcerated women include adverse childhood events, mental health problems, a family history of addiction, chronic stress, intimate partner violence, and chronic pain.<sup>59,60</sup> A study of women in prisons in four states found that, whereas 53 percent of women met current criteria for substance use disorder, 20 percent met criteria for both serious mental illness and substance use disorder. Lifetime, 38 percent met criteria for both serious mental illness and substance use disorder.<sup>48</sup> A study of German female prisoners with a substance use disorder found that 90 percent were diagnosed with a comorbid mental illness.<sup>61</sup> Therefore, taking a holistic approach in these cases is more likely to be effective.

Correctional facilities have been slow to adopt medication-assisted treatment (MAT) for opioid use disorders, although progress is being made.<sup>62,63</sup> MAT for pregnant inmates is a long-established practice in some U.S. jails and prisons.<sup>62</sup> Maintenance treatment with methadone or buprenorphine has been shown to reduce the risk of miscarriage and other complications of opioid withdrawal.<sup>59,60,64,65</sup> With a track record of more than 50 years, methadone remains the first-line choice for MAT during pregnancy, as recommended by the American College of Obstetrics and Gynecology and the World Health Organization.<sup>60,64,65</sup>

Buprenorphine is gaining favor as an alternative to methadone for pregnant women with opioid use disorder due to its better side effect profile (e.g., lower rates of preterm birth and fetal heart rate acceleration suppression). Although neonatal abstinence syndrome (NAS) may occur when the mother is treated with either methadone or buprenorphine, a less severe presentation is seen from the latter.<sup>64–65</sup> Initiation of buprenorphine maintenance can be challenging because it may induce withdrawal (and potentially cause pregnancy complications) if the woman has recently been exposed to opioids (especially in a jail or prison intake setting).

Prescribers should be aware that, during pregnancy, the maintenance dose of methadone or buprenorphine may need to be increased (due to increased circulating blood volume) or prescribed differently (e.g., split-dosing because of increased renal clearance during the third trimester).<sup>64</sup>

### **Personality Disorders**

Incarcerated women have higher rates of personality disorders than women in the community. In a

study of 261 female inmates, the most common diagnoses were antisocial personality disorder, paranoid personality disorder, and borderline personality disorder, with a high degree of comorbidity between antisocial and borderline personality disorders.<sup>66</sup> Similarly, in a review of 62 studies of mental disorders among prisoners, Fazel and Danesh found high rates of co-occurring personality disorders among women inmates, with the most common being antisocial personality disorder.<sup>41</sup>

Female inmates with personality disorders have more difficulty adapting to incarceration. In particular, women with certain personality disorders (i.e., schizotypal, borderline, avoidant, and dependent) may be more likely to experience anxiety and depression during incarceration. Women with borderline, dependent, and paranoid personality disorder were more likely to experience fear in prison, and women with paranoid personality disorder endorsed more sleep difficulties.<sup>67</sup> Impulsivity, recklessness, and poor coping skills make female inmates with personality disorders prone to self-injury<sup>68</sup> and other misconduct during incarceration. Antisocial personality disorder, has been associated with higher rates of institutional violence,<sup>66</sup> although female inmates are less likely than their male counterparts to engage in violence in prison.<sup>69</sup>

Hassan and colleagues<sup>6</sup> observed with concern that, in about a third of cases of women in British prisons who were prescribed medications, there was an off-label or undocumented indication, typically subsyndromal mood symptoms or personality disorder. Although it is understandable that problems may lead to desperate efforts to address them pharmacologically, medication management of personality disorders in corrections, regardless of gender, is controversial at best.<sup>1</sup> It is wise to identify and appropriately treat comorbid conditions, to use available psychotherapeutic strategies (e.g., dialectic-behavioral therapy) as an alternative or adjunct to medications, to avoid polypharmacy, and to continually assess the need for any given treatment.

### **Sleep Disorders**

Sleep disruption is a common complaint in incarcerated settings, and it is more often reported by incarcerated women than by incarcerated men.<sup>70–73</sup> Female inmates are prescribed sleep aids more often than male inmates,<sup>71</sup> possibly related to their higher

rate of certain mental illnesses (e.g., PTSD) as well as specified sleep disorders.

The prescription of medications marketed for insomnia may be discouraged in correctional settings. Many are controlled substances, which is a concern for prescribing in settings with higher rates of substance use disorders. The use of other noncontrolled medications with sedating properties may be limited due to cost, concerns about misuse, or safety concerns.<sup>1,70,72,73</sup> Some sedating antidepressants, such as mirtazapine or trazodone, may be used off-label in correctional systems because they may be relatively low-risk when compared with alternatives,<sup>1,72,73</sup> although concerns mentioned above, such as weight gain, safety during pregnancy, drug interactions, and CYP<sub>450</sub> interactions, should be considered.

Not every complaint of sleep disturbance must be met with a prescription. Sleep hygiene education and insomnia-focused cognitive behavioral therapy are first-line treatments and are often sufficient for such problems in correctional settings.<sup>1</sup>

### **Attention Deficit-Hyperactivity Disorders**

Females are diagnosed with an attention deficit-hyperactivity disorder (ADHD) and related conditions at a lower rate than their male counterparts, and women are more likely to have inattention than hyperactivity symptoms.<sup>74</sup> While as many as half of juveniles diagnosed with ADHD improve with maturity, women may have less symptom improvement with time compared to men.<sup>74-76</sup> Because inattention is less conspicuous than hyperactivity, it is advisable to specifically screen for ADHD in female inmates.

As discussed elsewhere,<sup>1</sup> a balanced approach to prescribing for ADHD should also be applied in women's correctional facilities, with judicious use of stimulant medication to address symptoms that impair one's functioning in prison and are unresponsive to noncontrolled alternatives. Stimulant medication availability is limited in male and female prisons for similar reasons, including potential for misuse, bartering and selling, intimidation and victimization, and availability of alternatives.<sup>77</sup> Nonstimulant options for ADHD (e.g., SNRIs, atomoxetine, clonidine, guanfacine) may also be considered, although research on these medications for women in jails and prisons is limited. There is also limited research about the use of ADHD medications during pregnancy in any setting.<sup>76</sup> Whereas the primary concern

about stimulant use during pregnancy is impairing fetal growth, there is no clear evidence of an increased risk of teratogenicity.<sup>76</sup> As with any medication during pregnancy, however, a risk-benefit analysis is critical; the risk of untreated ADHD in a correctional setting may be different.

### **Traumatic Brain Injury**

Although rates of traumatic brain injury (TBI) in the community are higher in men,<sup>78-80</sup> the rate among female prisoners is higher than women, and according to some studies even men, in the community.<sup>79,80</sup> Women with TBIs may, among other physical symptoms, experience sleep changes, difficulty with concentration, mood changes, irritability, and behavioral changes. Some have speculated that these changes may increase the risk for women to commit crimes post-TBI.<sup>79,80</sup>

Treatment of symptoms is often symptomatic and may require a creative and patient-centered approach. Three to six months after injury, the use of antidepressants may provide some symptom relief if there is lingering mood liability, anxiety, or depressive symptoms.<sup>81</sup> It may be difficult to differentiate lingering TBI-related symptoms from comorbid conditions such as substance withdrawal or primary psychiatric symptoms (e.g., PTSD). Careful clinical judgment is required regarding when to start a medication and for what specific reason, as well as to monitor for continued effectiveness.

### **Neurocognitive Disorders Among Aging Prisoners**

Older inmates are described as the fastest growing segment of the prison population,<sup>82,83</sup> and, as described above, the population of women in prison is also growing. For example, the number of geriatric female prisoners in California (the largest state prison system) increased 350 percent between 1996 and 2006.<sup>83</sup>

Accelerated aging occurs in prison,<sup>82</sup> with prisoners being deemed "geriatric" once they reach age 55, due to early development of disability and comorbid conditions.<sup>83</sup> Additionally, older women in prison have higher rates of comorbidities than men.<sup>83</sup> Risk factors for dementia that are more common in female incarcerated populations than the general population include head injury, depression, obesity, and substance abuse. Prison activities of daily living (PADL), including climbing into the top bunk, hearing orders, standing for counts, and dropping to the floor

for alarms, need to be considered in this population, in addition to usual community activities of daily living.<sup>83</sup> A study of geriatric female prisoners in California found that 28 percent reported memory loss and 69 percent reported one PADL impairment.<sup>83</sup> Female inmates with dementia are vulnerable to victimization by other prisoners<sup>82</sup> and to disciplinary actions due to difficulty with PADL requirements if cognitive impairment goes unnoticed.

Estrogen is no longer believed to be prophylactic against dementia. When initiating cholinesterase inhibitor therapy, the “start low, go slow” strategy is used to minimize adverse events in the geriatric population. This strategy was found to be more important among women than men in a large population-based study, in that serious events occurring immediately after initiating cholinesterase inhibitor therapy were associated with the starting dose, with the association being stronger in women.<sup>84</sup> A study of nursing home residents with Alzheimer’s disease across five states found gender differences in presentation, including women being less likely than men to exhibit behavior problems (including social impropriety, wandering, and abusiveness). But women and men with Alzheimer’s disease exhibited equal rates of hallucination, delusion, and depression.<sup>85</sup> Careful monitoring for these associated symptoms will allow for proper medication management.

### Paraphilias

Paraphilias among women may escape diagnosis due to bias in evaluations related to traditional gender roles in society. The correctional psychiatrist must be aware that not all sex offenses by women are due to coercion by males or caused solely by another mental illness. After diagnosis, female sex offenders should not necessarily receive the same treatments validated for male sex offenders. As an example, the Correctional Service of Canada runs a gender-responsive treatment program for female sexual offenders, with individual cognitive behavioral therapy, the Good Lives model, and relational theory.<sup>86</sup> Treatment of female sex offenders rarely involves medication, but SSRIs may be of utility.

### Conclusion

The mental health treatment needs of incarcerated women are complex and frequently involve comorbidities. Incarcerated women have higher rates of mental illness than women in the community or in-

carcerated men. Recommendations of specific pharmacologic treatment should be made based on the available research and correctional experience. Pregnancy, lactation, contraception, and menopause require specific consideration. Similarly, various common psychopathologies in women across age groups require respect for gender differences in treatment. Studies in this area are limited, and research on effective pharmacotherapy for psychiatric conditions of women in correctional facilities should be encouraged.

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