

during pregnancy and in 10–15% of women during the postpartum period. There is a high likelihood of recurrence of postpartum depression with subsequent pregnancies. The incidence of major depression diminishes after the age of 45 years and does not increase with the onset of menopause. Depression in women appears to have a worse prognosis than does depression in men; episodes last longer, and there is a lower rate of spontaneous remission. Schizophrenia and bipolar disorders occur at equal rates in men and women, although there may be sex differences in symptoms.

Both biologic and social factors account for the greater prevalence of depressive disorders in women. Men have higher levels of the neurotransmitter serotonin. Sex steroids also affect mood, and fluctuations during the menstrual cycle have been linked to symptoms of premenstrual syndrome. Sex hormones differentially affect the hypothalamic-pituitary-adrenal responses to stress. Testosterone appears to blunt cortisol responses to corticotropin-releasing hormone. Both low and high levels of estrogen can activate the hypothalamic-pituitary-adrenal axis.

■ COVID-19 INFECTION

(See also Chap. 199.) Soon after the discovery of COVID-19, which was identified in November 2019 in Wuhan, China, as being caused by the novel coronavirus SARS-CoV-2, it was evident that there were appreciable sex differences in severity and outcomes. Indeed, initial observational data from the winter of 2019 and spring of 2020 demonstrated a higher overall incidence of infectious cases, hospitalizations, intensive care unit admissions, and case-fatality rates among men as compared to women. More pronounced sex differences were observed with advanced age, with a higher overall incidence in older male age groups. These sex differences have persisted among different racial, ethnic, and socioeconomic groups and across all continents, as SARS-CoV-2 became a global pandemic.

There are several potential mechanisms for these sex-specific effects of SARS-CoV-2 infection. The virus's entry point into cells is the membrane-bound angiotensin-converting enzyme 2 (ACE2)