CDPH
California Department of Public Health

Supporting the Mental Health of California Mothers

Depression and Anxiety Symptoms, Screening, and Treatment

California Department of Public Health
Maternal, Child and Adolescent Health Division
Epidemiology, Surveillance and Federal Reporting Section

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Report Authors

Kristen Marchi, MPH, Christine Rinki, MPH, Katherine Heck, MPH, and Archana Minnal, MPH of the Center for Health Equity at the University of California San Francisco (UCSF) were responsible for the production of this report with guidance from Tyan Parker Dominguez, PhD, MPH, MSW (University of Southern California). Geospatial analyses were provided by Chuncui Fan, PhD (UCSF Center for Health Equity), and additional literature review and editing were provided by current and former UCSF Center for Health Equity staff Miranda Brillante, MPH, Nicole Holm, and Amber Tran.

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People Giving Birth Throughout California

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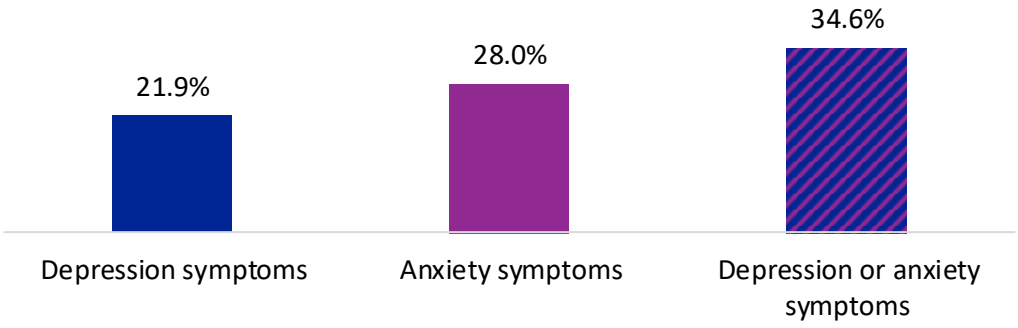
Executive Summary

Mental health is critical to overall health and well-being. Mental and emotional well-being helps individuals cope with life's stressors, achieve goals, succeed in work and school, and function as vital parts of their families and communities.[1] This is particularly true for birthing people due to physiological and social changes that occur during and after pregnancy. Mental health and wellness play key roles not only in a birthing person's overall health and well-being but also in the infant's birth outcomes and subsequent healthy development.[2-8] Depression and anxiety are among the most common complications of pregnancy and childbirth. Despite an increasing focus on mental health by clinical providers, health systems, and public health organizations in the past several years, efforts to improve the prevention and treatment of maternal mental health conditions have not met the growing needs of California's birthing population. The Maternal, Child and Adolescent Health (MCAH) Division of the California Department of Public Health (CDPH) recognizes that maternal mental health data play a key role in guiding programs and policies designed to improve mental health conditions during and after pregnancy. Therefore, in collaboration with the University of California, San Francisco (UCSF) Center for Health Equity, MCAH has released this in-depth report about depression and anxiety symptoms, mental health screening, treatment, and barriers to care during and after pregnancy among birthing people in California, using data from the Maternal and Infant Health Assessment (MIHA) and California's Vital Statistics.

Experiencing depression or anxiety symptoms is very common during and after pregnancy, impacting over one-third of birthing people

Percentage of birthing people in California who experienced depression symptoms, anxiety symptoms, or either depression or anxiety symptoms during or after pregnancy, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

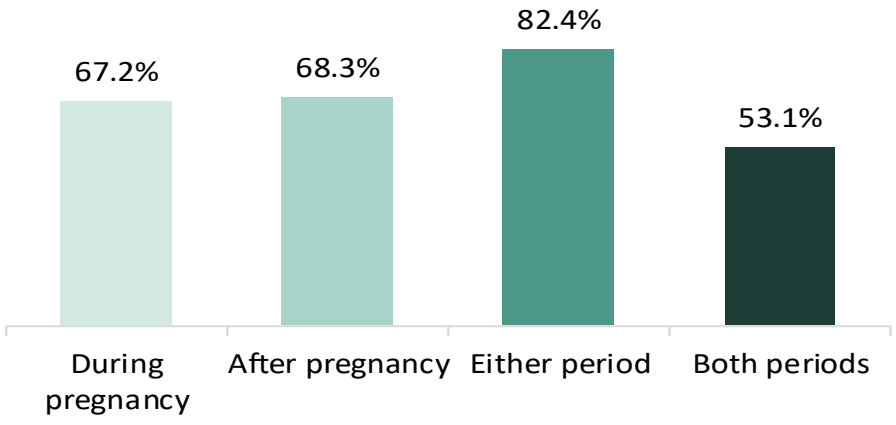
New MIHA data show that anxiety symptoms are more common than depression symptoms among California birthing people.

New MIHA data show that anxiety symptoms are more common than depression symptoms among California birthing people. **Together, nearly 35% of birthing people experience either depression or anxiety symptoms during or after pregnancy.** Efforts to prevent or screen and treat maternal mental health conditions must address anxiety as well as depression.

- **Racism is a stressor impacting maternal mental health and is associated with racial inequities in maternal mental health conditions.** Rates of depression and anxiety among Black birthing people were higher than the rates in California overall, with 30.8% reporting depression symptoms and 34.6% reporting anxiety. People of color who reported often worrying about racist mistreatment were more likely to report depression or anxiety symptoms than were those who did not often worry about racism.
- **Other social determinants of health across the life course, including stressors experienced during pregnancy, impact maternal mental health.** Birthing people living in poverty or those who reported stressors such as inadequate housing or food insecurity were more likely to report depression or anxiety symptoms than were birthing people who did not report those stressors.

Most birthing people are screened for mental health conditions at least once, yet only half meet professional medical associations' recommendation to screen both during and after pregnancy

Percentage of birthing people in California who were screened for mental health conditions during pregnancy, after pregnancy, during either period, or during both periods, 2020-2021



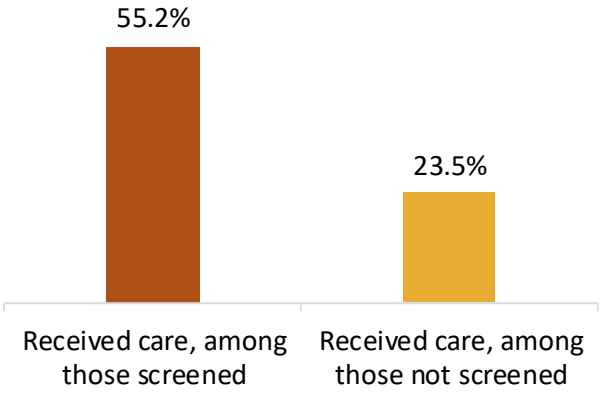
Source: Maternal and Infant Health Assessment, 2020-2021

While 82.4% of birthing people were screened for mental health conditions at least once either during or after pregnancy, only 53.1% were screened *both* during *and* after pregnancy. California law requires obstetric care providers to ensure patients are screened at least once either during or after pregnancy, but leading professional medical associations recommend screening birthing people at multiple time points *both* during *and* after pregnancy.[9]

- **After the baby was born, Asian, Black, or Hispanic birthing people, young birthing people, and those with low incomes were less likely to be screened** than were their counterparts.
- **One in four Medi-Cal participants (25.2%) were never screened for mental health conditions** during or after pregnancy, much higher than the 10.1% of privately insured people who were never screened.
- **Many birthing people who reported depression and anxiety symptoms did not think they needed help.** Not recognizing the need for treatment for mental health conditions is the single largest barrier to mental health care in the United States and globally.[10,11] It accounts for substantial delays in treatment among those with mental health conditions.[11,12]
- In California, **only about half of birthing people who reported needing help with their emotional well-being or mental health subsequently received care** from a doctor or mental health professional, suggesting that half of all birthing people have unmet mental health needs.

Screening is associated with receipt of mental health treatment

Among birthing people in California who perceived a need for mental health care, the percentage who received care, by mental health screening, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

While MIHA questions did not ascertain whether treatment followed a referral due to screening, among birthing people who felt they needed maternal mental health care, **those who were screened were over twice as likely to receive care** as were those who were not screened.

- **People who perceive a need for mental health treatment face a variety of barriers to receiving care.** The majority (58.6%) of birthing people in California felt they could handle their mental health concerns on their own, even though they had a perceived need for care. Mental health stigma played a large role in preventing receipt of treatment. Over one-quarter (27.4%) of birthing people who did not receive care were uncomfortable talking about their concerns with a provider. Just over one-fifth (22.0%) worried about being required to take medication if they seek care. Other common barriers to care were being too busy (38.6%) and not knowing where to go for care (32.4%).

Implications

As with physical health, the promotion of mental wellness requires a broad range of strategies across the life course. Because anxiety is the most prevalent mental health condition among birthing people, efforts to prevent, screen, and treat maternal mental health conditions during and after pregnancy must address anxiety as well as depression. While both pregnancy and the birth of a child present potential new risks to mental health, this time also offers important opportunities for intervention. To engage birthing people and ultimately improve their emotional well-being, a multi-pronged approach is likely to be most successful. Potential strategies include the following:

(a) continuing efforts to ameliorate the social and economic conditions, including structural racism, that create stress and contribute to depression and anxiety symptoms;

(b) improving mental health literacy, specifically increasing knowledge about and reducing the stigma surrounding maternal mental health conditions and treatment options;

(c) ensuring respectful maternity care that includes mental health screening, with further assessment and referrals as appropriate, at the frequencies recommended by best practices; and

(d) increasing the numbers and types of care options and ensuring adequate insurance coverage for mental health screening and treatment.

Conclusion

Mental health concerns are among the most common complications of pregnancy and childbirth. To reduce the prevalence of depression and anxiety during this important and potentially vulnerable period of a birthing person's life it is critical to improve living circumstances, increase social support, and reduce exposure to racism and other stressors across the life course. For California's birthing people who do experience maternal mental health conditions, the pathway from screening and recognition of

symptoms to treatment must be straightforward and easy to navigate. Improving California's low rates of treatment among those with depression or anxiety symptoms requires multiple strategies, such as improving maternal mental health literacy among birthing people and providers, ensuring respectful screening and referral at multiple points during and after pregnancy, and improving access to expanded options for care. Preventing mental health conditions and ensuring adequate treatment for those who experience mental health symptoms during and after pregnancy both have the potential to advance the well-being of birthing people and of their families for years to come. While there has been notable progress in recent years, public health and health care systems have a long way to go. Despite challenges ahead, California must not lose sight of a vision in which all mothers, parents, babies, and families experience emotional well-being and positive relationships. This will require redoubling efforts to ensure that all California birthing people receive the mental health care they need.

Introduction

Mental health impacts overall health and well-being. Mental and emotional well-being helps individuals cope with life's stressors, achieve goals, succeed in work and school, and function as vital parts of their families and communities.[1] This is particularly true for birthing people due to the physiological and social changes that occur during and after pregnancy. Importantly, pregnancy and the birth of a child present unique opportunities for improving mental health among mothers and other birthing people, with potential benefits across the life course of both mother and infant.

Among birthing people, the risk of developing or worsening mental health conditions during and after pregnancy is inextricably linked to mental health throughout the life course.[13,14] Depression and anxiety are two serious mental health conditions commonly experienced by birthing people[15] that often go undiagnosed and untreated.[2,3,16-19] A history of depression before pregnancy is strongly associated with depression during pregnancy, and a history of depression before or during the current pregnancy increases the risk of depression after pregnancy.[13,14,20,21] In some rare cases, mental illness in the perinatal period leads to deaths by suicide.[22] In California's review of pregnancy-associated suicide, most were affected by mental health conditions, including depression, prior to and during pregnancy.[23] A large study of women who delivered infants in Sweden connected clinically diagnosed depression during or after pregnancy with a three-fold increase in dying by suicide compared to those who were not clinically diagnosed with depression, with postpartum depression having the biggest effect.[24]

"When I had my 6-week postpartum checkup, I indicated that I was feeling fairly depressed. The doctor looked at the form, said 'good, good, this all looks normal' and moved on. I felt ignored and marginalized. After women have their babies, it seems as if the health care industry forgets about them, focusing only on the infants. I had every resource at my disposal to sort through my mental health and it was still excruciatingly difficult. I can't imagine what it would have been like to not have had the support I had. We need to care about the mothers more."

– MIHA 2020 participant, age 31, San Francisco Bay Area

In addition to significant impacts on maternal well-being, depression or anxiety during pregnancy can increase the risk of poor pregnancy and birth outcomes, such as preeclampsia or preterm delivery.[4,8,23,25-27] Mental health conditions among birthing people during and after pregnancy can also negatively impact breastfeeding and a range of infant and child development markers, from infant bonding to speech development.[8,27-30] Having a mother with depression or anxiety during or after pregnancy can predict poor childhood cognitive and social-emotional development as well as adolescent depression.[5-7,31] Untreated depression and anxiety during and after

pregnancy, along with other mental health conditions, cost the California economy an estimated $2.4 billion from conception to five years after birth due to reduced maternal productivity, increased medical expenditures, and higher preterm birth rates.[18]

Inequitable exposure to social and structural conditions can impact mental health. For example, exposure to interpersonal and institutional racism and discrimination is associated with mental health disorders, including anxiety, depression, and posttraumatic stress disorder, among people of color.[32] Conditions like depression and anxiety are also heavily impacted by other social, environmental, and economic stressors such as neighborhood violence, food and housing insecurity, and poverty.[8,21,33 -39]

Women and other birthing people who have depression or anxiety need adequate and timely treatment. The United States mental health care system lacks capacity to adequately address need, with too few available providers whose backgrounds and languages match clients' needs; insufficient provider training on maternal mental health issues; inadequate patient insurance coverage; and overly complex processes for authorizing and paying for care among insured patients.[40,41,42] People who feel stigmatized about their perinatal mental health conditions may not seek care and societal norms may affect how they are treated in the health care and social service systems.[43,44] Increased public attention to the importance of maternal mental health in recent years has resulted in expanded programs and policies that address not only postpartum depression but also a broader range of mental health conditions both during and after pregnancy. Policy efforts in California have resulted in legislation to improve mental and emotional well-being among all birthing people and their families by creating public awareness campaigns that help destigmatize mental health conditions, requiring mental health screening by providers during and after pregnancy, training hospital perinatal health care staff on maternal mental health conditions, and requiring providers to give patients information about mental health and available resources.[45] Much more work remains to be done to screen for, diagnose, and treat maternal mental health conditions.

To that end, the Maternal, Child and Adolescent Health Division (MCAH) of the California Department of Public Health (CDPH) collaborated with the University of California, San Francisco (UCSF) Center for Health Equity to produce this report, *Supporting the Mental Health of California Mothers*. The report provides recent data on depression symptoms and presents previously unavailable data on anxiety symptoms, perinatal screening, need for and receipt of mental health treatment, and barriers to treatment. Implications of these new findings include promoting healthy social and environmental conditions; mental health literacy; adequate screening, follow-up, and referrals to services; and access to affordable mental health care. A goal of MCAH is that all parents and their infants and families experience emotional well-being and that emotionally healthy parents are able to create strong, positive relationships with their children.[46] The information presented in this report can help guide actions to improve maternal mental health in California for generations to come.

Methods

Data Source

Data for this report were drawn from the 2018-2021 Maternal and Infant Health Assessment (MIHA), a population-based, stratified sample of people aged 15 years or older who gave birth in California. There were 24,664 respondents to the MIHA survey during 2018-2021, reflecting a response rate of 61.6%. The survey was available in English and Spanish. MIHA participants were sampled from live-birth certificates; Black birthing people and people having preterm births were oversampled to ensure enough participants for analysis, and data were weighted to be representative of California's birthing population. Participants completed the survey between approximately two and ten months postpartum, meaning after the baby was born, with over 80% completing it prior to six months postpartum.

Table 1. Mental health items in MIHA 2018-2021

Topic	Item	2018-2019	2020-2021
Depression symptoms	Reported experiencing symptoms during pregnancy	X	X
	Reported experiencing symptoms after pregnancy (postpartum)	X	X
Anxiety symptoms	Reported experiencing symptoms during pregnancy		X
	Reported experiencing symptoms after pregnancy (postpartum)		X
History of depression	Had depression prior to most recent pregnancy	X	X
Screening for anxiety or depression symptoms	Screened during pregnancy		X
	Screened after pregnancy (postpartum)		X
Mental health care	Needed help for emotional well-being or mental health concerns	X	X
	Saw a doctor or mental health professional for emotional or mental health counseling or treatment	X	X
	Reported barriers to receiving needed mental health care	X	X

In addition to existing questions on depression symptoms, perceived need, and mental health care, questions on anxiety symptoms and mental health screening were added to the MIHA survey in 2020. The questions on screening for anxiety and depression symptoms and the question on barriers to mental health care were cycled off of the questionnaire in 2022. Table 1 describes the measures that were available in MIHA during 2018-2021.

Anxiety and depression symptoms during and after pregnancy were assessed in the MIHA survey using a modified version of the Patient Health Questionnaire-4 (PHQ-4) screening tool, which is a combination of the PHQ-2 and the Generalized Anxiety Disorder-2 (GAD-2). PHQ-4 has been validated across diverse population groups,[47,48] including among pregnant and postpartum individuals.[49,50] While the original PHQ-4 asks about the *number of days during the previous two weeks* the respondent experienced feelings of depression or anxiety, the PHQ-4 was modified in the MIHA survey to ask about feelings *during pregnancy* and feelings *since the most recent birth*, with frequency in five categories from "Always" to "Never," as shown in Table 2.

Table 2. Wording of Patient Health Questionnaire-4 question adaptations in MIHA

Mental health condition	Symptoms during pregnancy	Symptoms after pregnancy
Depression symptoms	During your pregnancy, how often did you feel down, depressed, or hopeless? During your pregnancy, how often did you have little interest or little pleasure in doing things you usually enjoyed?	Since your most recent birth, how often have you felt down, depressed, or hopeless? Since your most recent birth, how often have you had little interest or little pleasure in doing things you usually enjoyed?
Anxiety symptoms	During your pregnancy, how often did you feel nervous, anxious, or on edge? During your pregnancy, how often were you not able to stop or control worrying?	Since your most recent birth, how often have you felt nervous, anxious, or on edge? Since your most recent birth, how often have you not been able to stop or control worrying?

Respondents who reported "Always" or "Often" experiencing either of the two depression or anxiety items during or after pregnancy are counted in this report as experiencing serious depression symptoms or anxiety symptoms. This categorization mirrors the approach used by the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring Survey (PRAMS)[51] and estimates the prevalence of serious symptoms of depression or anxiety during and after pregnancy.

History of depression was ascertained using the following item:

History of depression
Before you got pregnant, did a doctor, nurse, or other health care worker ever tell you that you had any of the following health conditions? Depression (Yes/No)

Screening for mental health conditions during and after pregnancy was asked using the following items:

Screening during pregnancy	Screening after pregnancy
During your pregnancy, did you fill out a form or were you asked a series of questions from a doctor, nurse, social worker, or other professional about feeling down, depressed, anxious, or irritable? (Yes/No)	Since your most recent birth, have you filled out a form or have you been asked a series of questions from a doctor, nurse, social worker, or other professional about feeling down, depressed, anxious, or irritable? (Yes/No)

Perceived need for mental health care, receipt of care, and barriers to care were measured with the questions below. Receipt of care was asked of respondents who felt they needed care; barriers were asked of those who felt they needed care but did not receive it.

Perceived need for mental health care
At any time during pregnancy or since your most recent birth, did you feel you needed help for emotional well-being or mental health concerns, such as feeling anxious, irritable, restless, down, depressed, or hopeless? (Yes/No)

Receipt of care
When you felt you needed help, did you ever see a doctor or mental health professional for emotional or mental health counseling or treatment? (This can include an obstetrician, primary care doctor, midwife, counselor, therapist, social worker, psychologist, or psychiatrist.) (Yes/No)

Barriers to care

What were your reasons for not getting emotional or mental health counseling or treatment during pregnancy or since your most recent birth? Check all that apply.

- I was unsure where to go for treatment or what was best for me
- It cost too much or my insurance did not cover it
- I couldn't find a provider who could see me
- I was too busy
- I had problems with transportation or childcare
- I was worried I might have to take medication
- I was uncomfortable talking about my concerns with anyone
- I was worried what would happen if someone found out I had mental health concerns
- I got help from my religious or spiritual leader, or traditional healer
- I didn't think I needed help at the time or thought I could handle my concerns on my own
- Other

During analyses, barriers to care were grouped into three larger categories: health care systems and providers, individual practical considerations, and individual attitudes or stigma.

Data analysis

For comparability across estimates in this report, descriptive frequencies are presented for depression symptoms, anxiety symptoms, screening, and mental health care, using 2020-2021 data. Where reporting of trends is possible, data presented include the available years during 2016 to 2021. All associations described in this report are statistically significant ($p<.05$) based on prevalence ratios from multivariable logistic regression models (data not shown) or chi-square tests.

Using 2020-2021 data, multivariable models were calculated to predict the outcomes above, including maternal age, family income as a percentage of the federal poverty guidelines, prenatal insurance, race and ethnicity, and parity as predictors. Race and ethnicity were included as proxies for exposure to structural and interpersonal racism and not as biological variables. In addition, screening was included as a predictor in models for perceived need for or receipt of mental health care to determine whether screening was associated with perceived need and receipt of care.

Gendered language used in this report

Not every person who experiences pregnancy and gives birth identifies as a woman or a mother, but gender identification data are not available for MIHA survey participants. Therefore, the words “birthing individuals/people,” “mothers,” and “parents/families” are used to describe the population experiencing pregnancy, birth, and parenthood.

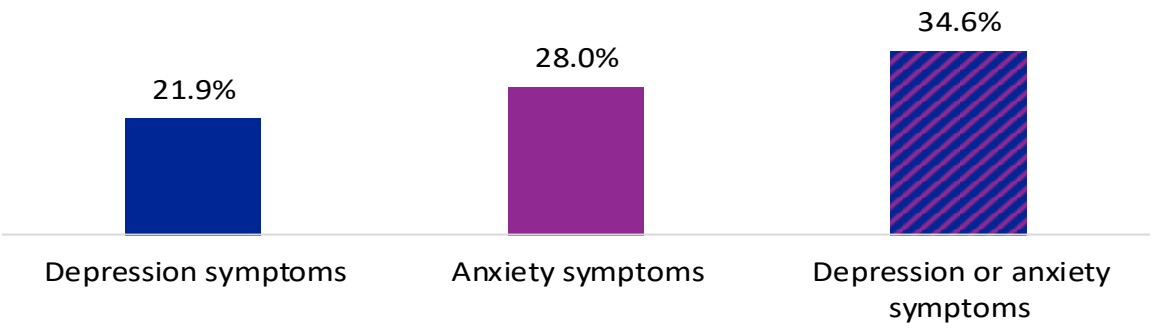
Results

Depression and anxiety

During pregnancy, mental health conditions may be influenced by stress associated with pregnancy or other life events, as well as by physiological changes, including hormonal fluctuations. Depression during or after pregnancy is characterized by intense feelings of sadness, anxiety, or despair that may prevent birthing individuals from doing their daily tasks. Anxiety refers to several anxiety disorders (such as generalized anxiety disorder, panic disorder, social anxiety disorder, specific phobias, and obsessive-compulsive disorder) that differ from normal feelings of nervousness or anxiousness and involve excessive fear or anxiety that interferes with daily activity. Pregnancy-related anxiety, involving anxiety about aspects of pregnancy and birth, is another condition that impacts some birthing people.[52] Anxiety is increasingly recognized as being more common than depression in the US population.[53] Both depression and anxiety can result in substantial disability.[18,54]

Figure 1. Experiencing depression or anxiety symptoms is very common during and after pregnancy, impacting over one-third of birthing people

Percentage of birthing people in California who experienced depression symptoms, anxiety symptoms, or either depression or anxiety symptoms during or after pregnancy, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

In California during 2020-2021, 21.9% of birthing people reported experiencing depression symptoms and 28.0% experienced anxiety symptoms around the time of pregnancy, with 34.6% of birthing people experiencing symptoms of depression or anxiety (Figure 1).

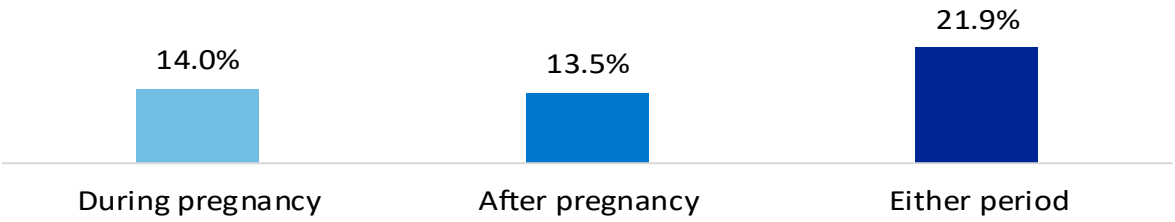
While depression and anxiety symptoms can occur individually, they also commonly can occur together. About 15.5% of birthing people experienced both depression and anxiety, while 12.5% experienced anxiety only and 6.4% experienced depression only (data not shown).

Depression symptoms

Depression symptoms can fluctuate across an individual's life course, including during and after pregnancy, in a pattern characterized by alternating periods of depression and of wellness.[55,56]

Figure 2. About 1 in 5 birthing people experienced depression symptoms during or after pregnancy

Percentage of birthing people in California who experienced depression symptoms during pregnancy, after pregnancy, and in either period, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

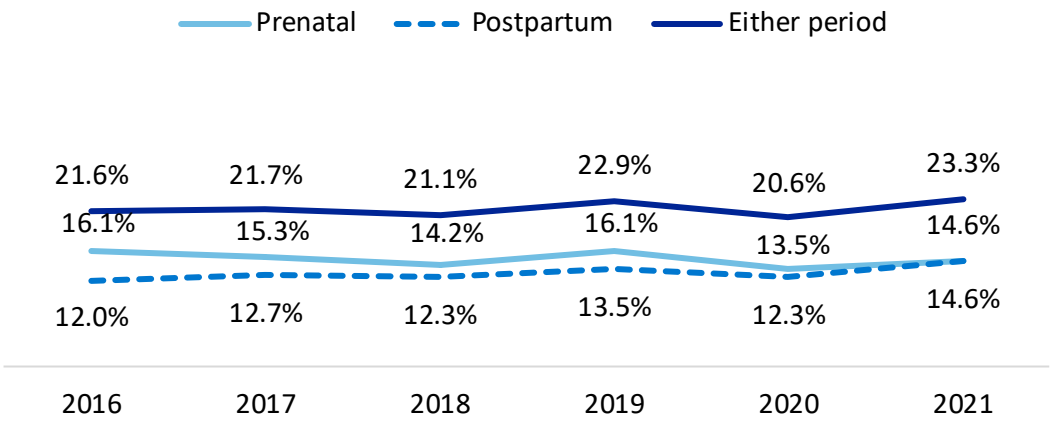
About one in five birthing people in California (21.9%) experienced depression symptoms during or after pregnancy in 2020-2021, with 14.0% reporting depression symptoms during pregnancy and 13.5% reporting them postpartum (Figure 2).

A history of depression prior to pregnancy is a risk factor for depression during and after pregnancy. History of depression in this study was measured by asking whether survey participants had been told by a health care provider prior to pregnancy that they had depression. In California, birthing people who reported a history of depression were 3.0 times as likely to experience depression symptoms during pregnancy and 2.7 times as likely to experience depression symptoms after pregnancy as were those who did not report a history of depression (data not shown).

Additionally, people who experience depression symptoms *during* pregnancy have a higher risk of experiencing postpartum depression symptoms. Among people who experienced depression symptoms during pregnancy, 40.9% continued to experience these symptoms after the baby was born. Among those who did not experience prenatal depression symptoms, the percentage who reported postpartum symptoms was much lower, 9.0% (data not shown).

Figure 3. Postpartum depression symptoms increased in 2021

Percentage of birthing people in California who experienced depression symptoms during pregnancy, after pregnancy, and in either period, 2016-2021



Source: Maternal and Infant Health Assessment, 2020-2021

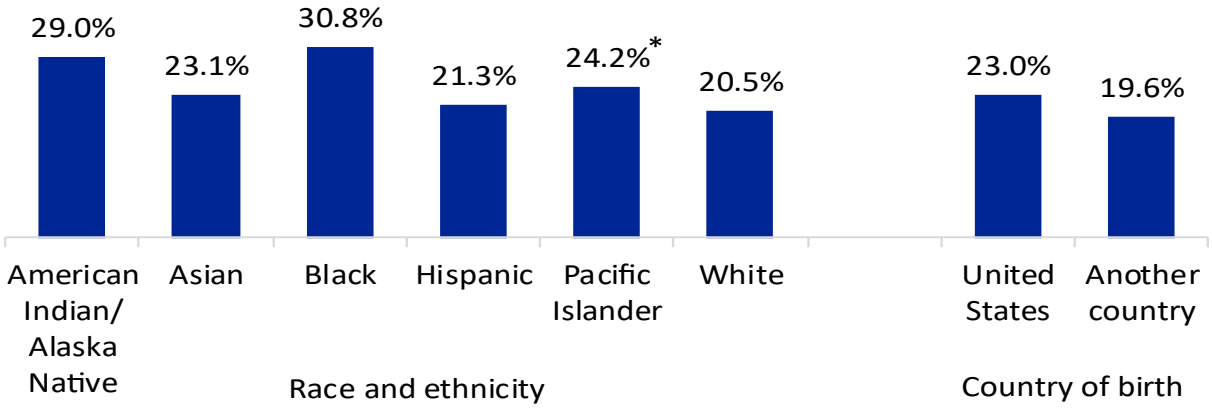
The prevalence of prenatal depression symptoms among birthing people in California did not change significantly during 2016-2021 (Figure 3). Depression symptoms after pregnancy were also stable during 2016-2020 but increased during 2021. These findings are similar to national survey data showing that Americans experienced higher rates of poor mental health between summer 2020 and spring 2021,[57] likely due to the COVID-19 pandemic.

"I went through postpartum depression with my first born and I was totally caught off guard. No one educated me on that reality after birth. I would like to see more resources on how to prevent and/or cope with postpartum depression."

– MIHA 2020 participant, age 25, Southeastern California

Figure 4. About 3 in 10 Black or American Indian/Alaska Native birthing people reported depression symptoms

Percentage of birthing people in California who reported depression symptoms during or after pregnancy, by race and ethnicity and country of birth, 2020-2021



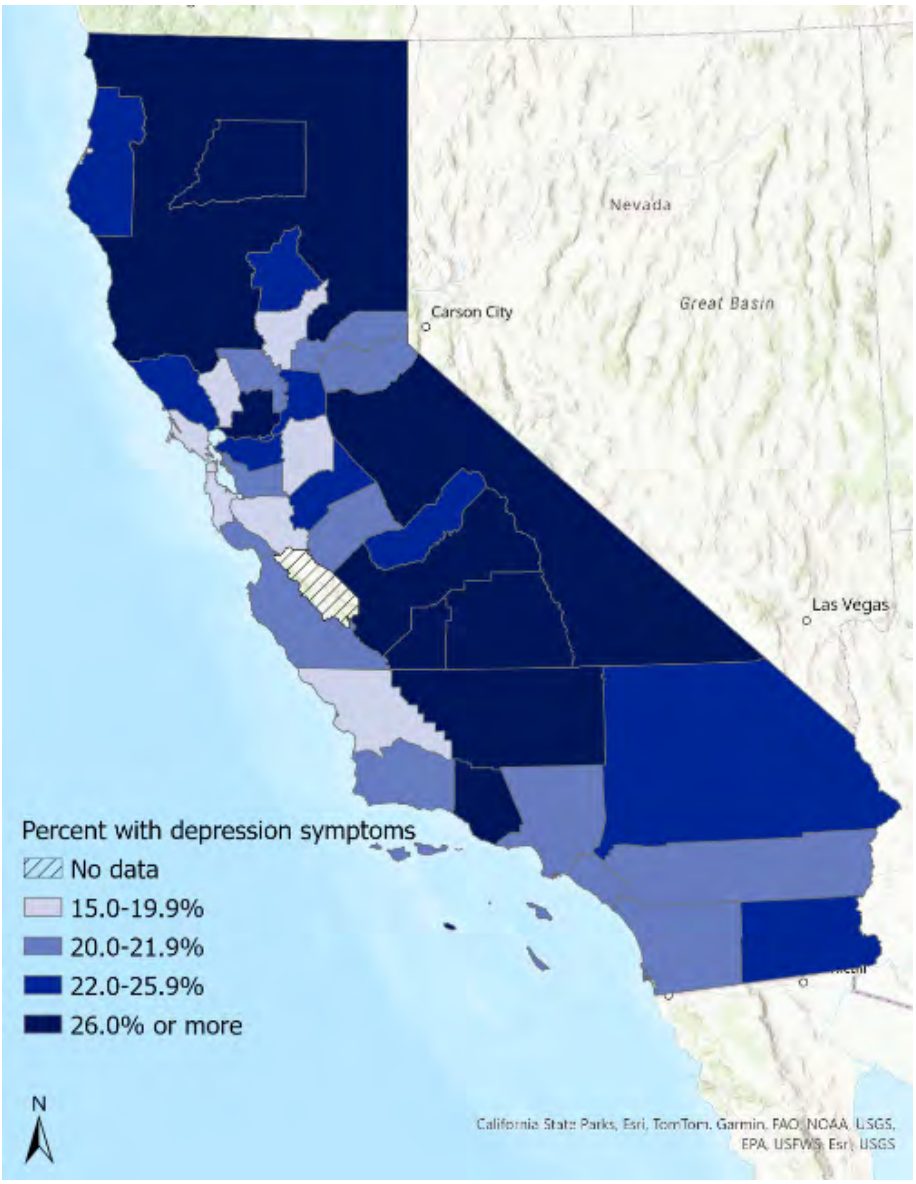
Source: Maternal and Infant Health Assessment, 2020-2021
**Estimate should be interpreted with caution due to low statistical reliability (RSE is between 30% and 50%).*

As shown in Figure 4, about 3 in 10 Black birthing people (30.8%) experienced depression symptoms during or after pregnancy, a percentage that was similar to American Indian/Alaska Native birthing people (29.0%) and higher than those seen among Asian, Hispanic, or White birthing people. People born in the United States more frequently reported depression symptoms (23.0%) than did those born in other countries (19.6%). Younger maternal age was also associated with depression symptoms; one-third (33.1%) of birthing people ages 15-19 years had depression symptoms, compared to 17.4% of those aged 35 years and older (data not shown).

About 3 in 10 Black or American Indian/Alaska Native birthing people reported depression symptoms.

Figure 5. Several counties in California had high rates of depression symptoms compared to those of other counties

Percentage of birthing people in California who reported depression symptoms during or after pregnancy, by county or region, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021. Data shown are for the 35 largest counties in California; Sutter and Yuba county combined; and North/Mountain region counties combined. Data for San Benito County are not shown due to small sample size.

The prevalence of depression symptoms among birthing people during or after their pregnancies varied across regions of the state. More than one in five birthing people (26.0% or more) in the counties depicted in dark blue experienced depression

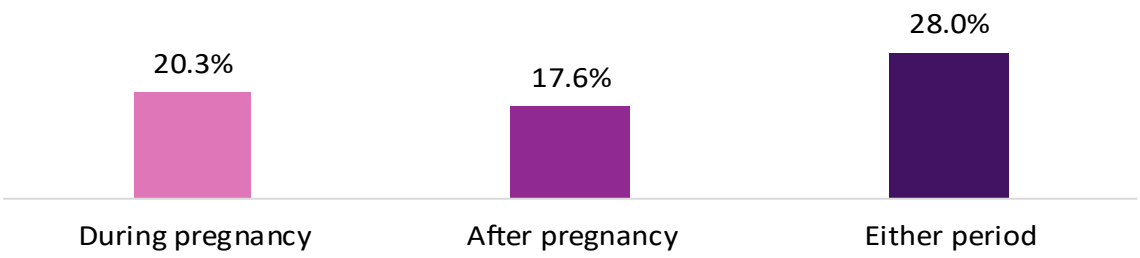
symptoms during or after pregnancy (Figure 5). Depression symptoms were more common among residents of the southern Central Valley and the North/Mountain region, areas with higher percentages of rural residents than are found in other areas of California.

Anxiety symptoms

Anxiety is by far the most prevalent mental health condition among US adults.[53,58]

Figure 6. Over one-quarter of birthing people experienced anxiety symptoms during or after pregnancy

Percentage of birthing people in California who experienced anxiety symptoms during pregnancy, after pregnancy, and in either period, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Anxiety symptoms affected 28.0% of California birthing people during 2020-2021 either during or after pregnancy, including one in five (20.3%) during pregnancy (Figure 6). The prevalence of anxiety symptoms increased from 26.3% in 2020 to 29.7% in 2021 (data not shown). Among California birthing people, anxiety symptoms were more frequently reported than depression symptoms, both prenatally and postpartum.

"There could be more support given to mothers postpartum. One appointment with an OB/GYN 6 weeks later is not enough. I had so much support and resources around me and still felt anxious, isolated, and lonely."

– MIHA 2021 participant, age 34, San Francisco Bay Area

Figure 7. About one in three American Indian/Alaska Native, Black, Pacific Islander, or White birthing people experienced anxiety during or after pregnancy

Percentage of birthing people in California who reported anxiety symptoms during or after pregnancy, by race and ethnicity and country of birth, 2020-2021

Source: Maternal and Infant Health Assessment, 2020-2021

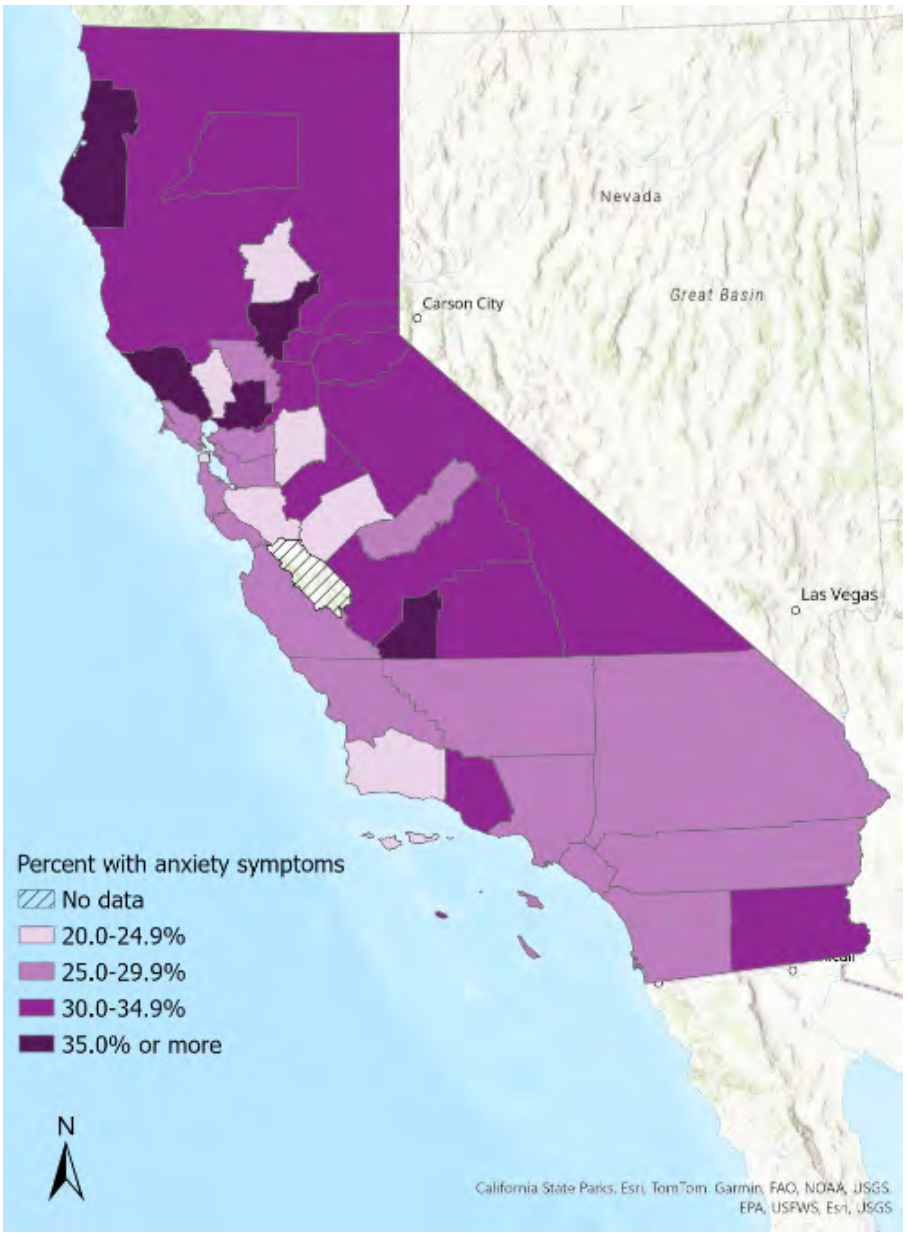
The prevalence of anxiety symptoms varied across different groups of birthing people. As shown in Figure 7, 36.8% of American Indian/Alaska Native birthing people experienced anxiety, as did 34.6% of Black, 33.6% of Pacific Islander, and 31.9% of White birthing people. The percentage of Black and White birthing people who reported anxiety was significantly higher than those among Asian or Hispanic birthing people. In addition, individuals who were born in the United States were much more likely to report anxiety symptoms (31.9%) than were those who were born in other countries (19.6%). Birthing people who were 20-24 years of age were more likely to report anxiety symptoms (33.0%) than were those aged 35 years and older (24.1%) (data not shown).

"I wish my healthcare provider would have asked me about depression and anxiety. I really needed someone to ask, and I probably would've told them about how I'm struggling. It seems to be getting better, but some days are really hard."

– MIHA 2020 participant, age 25, Central Coast

Figure 8. Birthing people in Northern California had a higher prevalence of anxiety symptoms than did those in Southern California

Percentage of birthing people in California who experienced anxiety symptoms during or after pregnancy, by county or region, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021. Data shown are for the 35 largest counties in California; Sutter and Yuba County combined; and North/Mountain region counties. Data for San Benito County are not shown due to small sample size.

At least 35.0% of birthing people in the counties depicted in dark purple experienced anxiety symptoms during or after pregnancy (Figure 8). Birthing people in Solano,

Sonoma, Humboldt, and Kings Counties reported a higher prevalence of anxiety symptoms than did those in other counties. Residents of northern and mountain areas of California were more likely than those in Southern California to report anxiety symptoms.

Social determinants of mental health

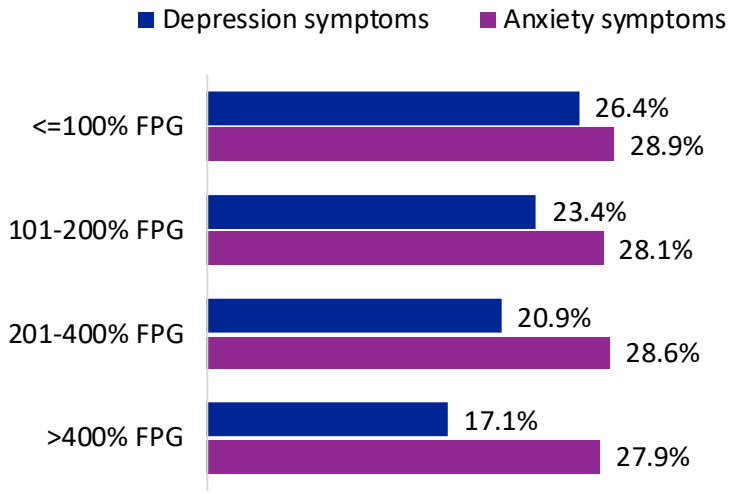
Social determinants, or the circumstances in which people grow, live, and work, have a strong influence on mental health. Positive circumstances, such as stable housing, food security, education, and social support, have positive effects on mental health, while others, such as low family income, stressful life events,[15] and racial discrimination, harm mental health.[34,39,59-61]

Family income

Low family income was associated with a higher prevalence of depression symptoms (Figure 9). Over one-quarter (26.4%) of birthing people with incomes below federal poverty guidelines (FPG) experienced depression symptoms, compared with 17.1% among those with incomes >=400% FPG. Anxiety symptoms did not appear to vary by family income.

Figure 9. Low family income was associated with depression symptoms

Percentage of birthing people in California who reported depression symptoms or anxiety symptoms during or after pregnancy, by family income as a percentage of Federal Poverty Guidelines (FPG), 2020-2021



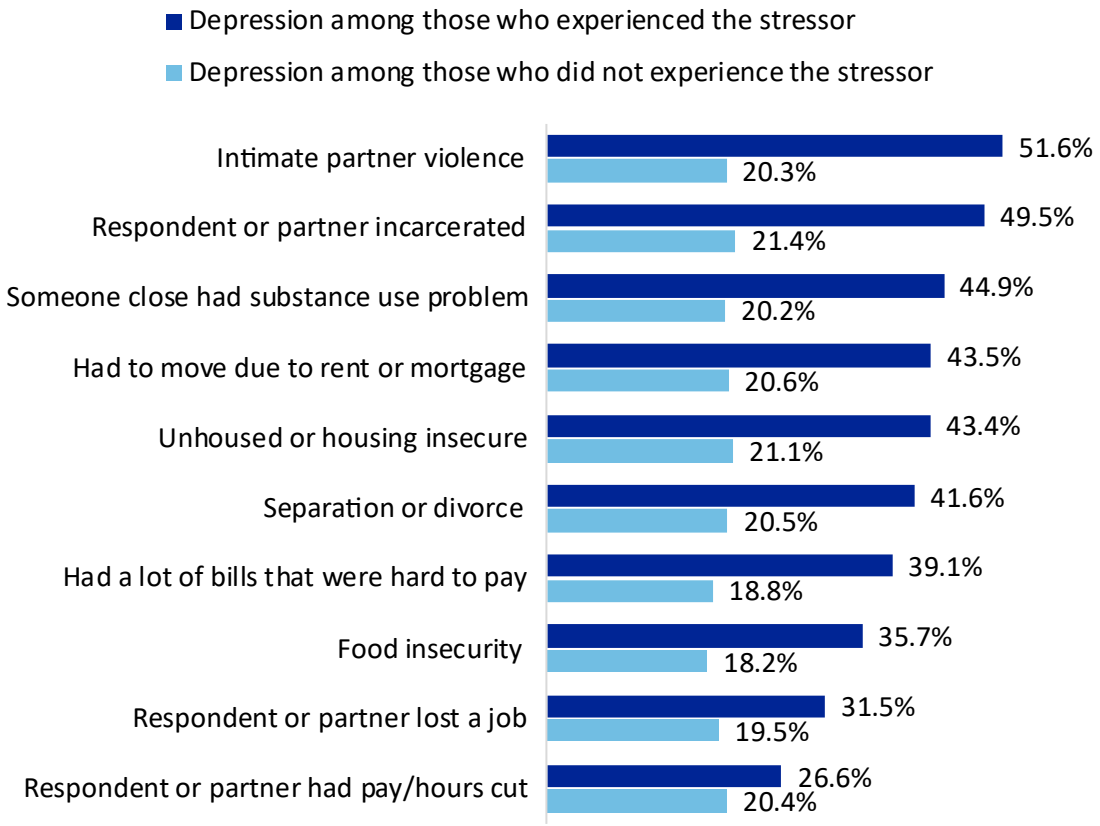
Source: Maternal and Infant Health Assessment, 2020-2021

Stressful life events

Stressful life events, or stressors, are undesirable events or conditions that have negative consequences on well-being.[62] The experience of stressful events is associated with a higher risk of depression and anxiety.[15]

Figure 10. Birthing people who experienced stressors during pregnancy more often reported depression symptoms

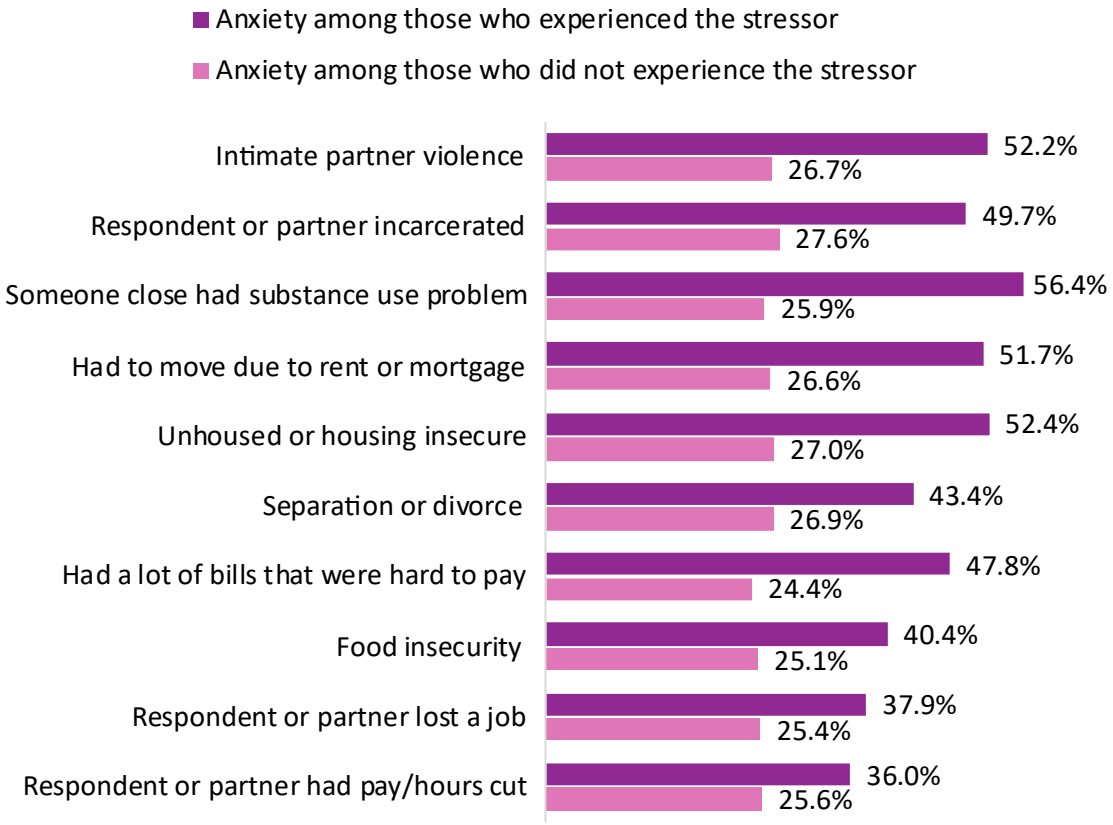
Percentage of birthing people in California who reported depression symptoms during or after pregnancy among those who experienced stressful life events during pregnancy, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Figure 11. Birthing people who experienced stressors during pregnancy more often reported anxiety symptoms

Percentage of birthing people in California who reported anxiety symptoms during or after pregnancy among those who experienced stressful life events during pregnancy, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Birthing people who experienced stressful life events during pregnancy reported higher rates of depression and anxiety symptoms during or after pregnancy than did those who did not experience stressors (Figure 10, Figure 11). For example, more than half of those who experienced intimate partner violence during pregnancy experienced depression (51.6%) or anxiety (52.2%) symptoms, whereas those who did not experience intimate partner violence had much lower rates (20.3% and 26.7%, respectively). Likewise, nearly half of those who experienced their own incarceration or that of a partner reported depression (49.5%) or anxiety (49.7%) symptoms, rates much higher than those among individuals who did not experience incarceration (21.4% depression symptoms, 27.6% anxiety symptoms). Among birthing people who experienced housing insecurity or who had a close family member or friend suffer from substance use problems, over 40% reported depression symptoms and over 50% reported anxiety. Birthing people who were separated or divorced during pregnancy,

had a lot of bills they could not pay, experienced food insecurity, or encountered job problems personally or for their partner also had high rates of depression or anxiety symptoms. These stressful life events were more commonly reported by birthing people of color and by those with lower incomes or lower education levels.

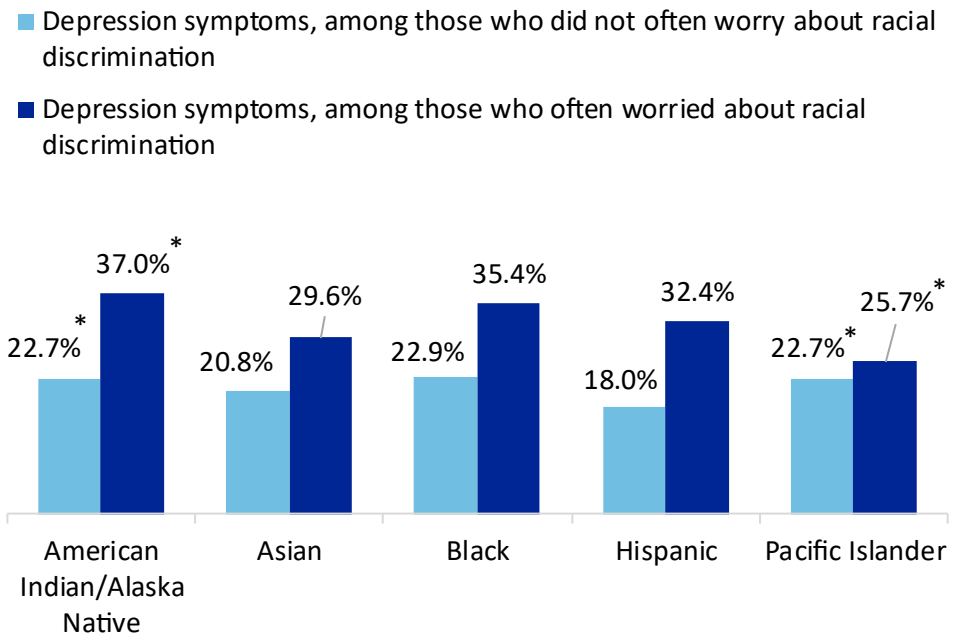
In addition, birthing people who had to change, quit, or not take a job due to problems with childcare after the baby was born reported higher rates of depression or anxiety symptoms after pregnancy (33.4%) than did people who did not experience childcare-related job disruptions (18.4%) (data not shown).

Racial discrimination

Racial discrimination or mistreatment is a risk factor for depression and anxiety, including during pregnancy.[32,35,63,64] Moreover, the heightened vigilance about racism that people of color may experience because of repeated exposure to racism is associated with depression.[65] Many birthing people reported vigilance due to racism; in California, nearly two-thirds (61.7%) of Black birthing people worried often about being treated unfairly due to racial discrimination during 2020-2021, as did 46.5% of American Indian/Alaska Native, 28.3% of Asian, 21.9% of Hispanic, and 25.5% of Pacific Islander birthing people (data not shown).

Figure 12. Worry about racial discrimination was associated with depression symptoms

Percentage of American Indian/Alaska Native, Asian, Black, Hispanic, and Pacific Islander birthing people in California who experienced depression symptoms during or after pregnancy by frequency of worry about mistreatment due to racial discrimination, 2020-2021

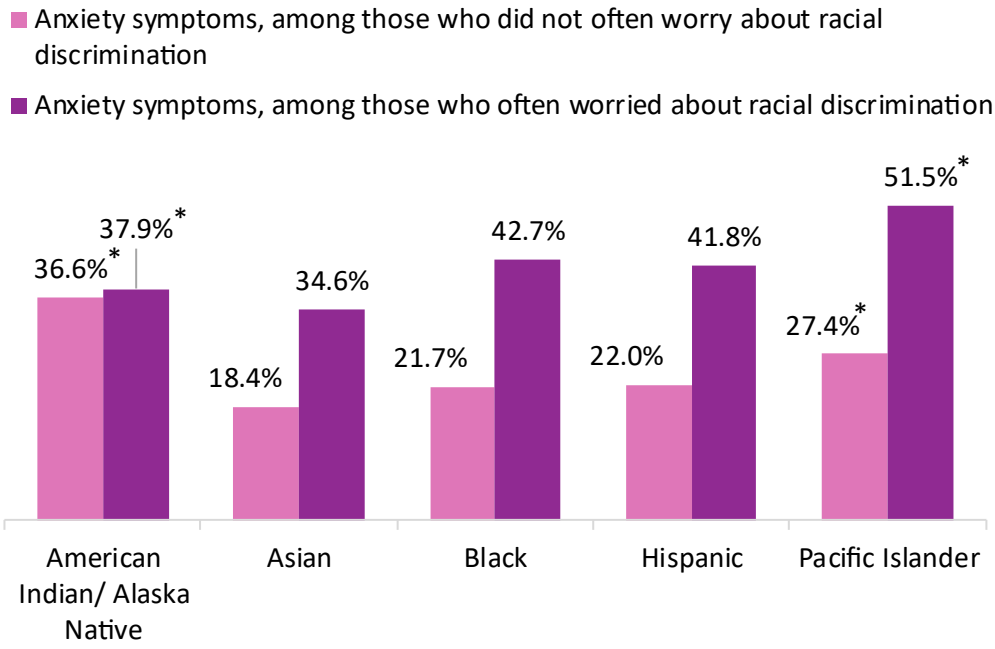


Source: Maternal and Infant Health Assessment, 2020-2021. 'Worried often' refers to worrying very often or somewhat often about being treated unfairly due to racial discrimination; 'did not worry often' refers to worrying not very often or never.
**Estimate should be interpreted with caution due to low statistical reliability (RSE is between 30% and 50%).*

Black birthing people who worried often about discrimination were more likely to experience depression symptoms (35.4%) than were those who did not worry often (22.9%), as shown in Figure 12. Asian and Hispanic individuals were also more likely to experience depression symptoms if they often worried about discrimination.

Figure 13. Worry about racial discrimination was associated with anxiety symptoms

Percentage of American Indian/Alaska Native, Asian, Black, Hispanic, and Pacific Islander birthing people in California who experienced anxiety symptoms during or after pregnancy by frequency of worry about mistreatment due to racial discrimination, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021. 'Worried often' refers to worrying very often or somewhat often about being treated unfairly due to racial discrimination; 'did not worry often' refers to worrying not very often or never.
**Estimate should be interpreted with caution due to low statistical reliability (RSE is between 30% and 50%).*

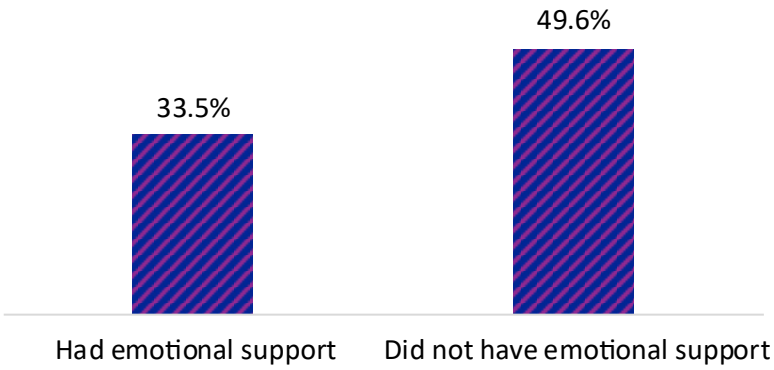
A similar association between worry about discrimination and mental health was seen for anxiety symptoms (Figure 13). Asian, Black, and Hispanic birthing people who worried often about racial discrimination were more likely to experience anxiety symptoms than were those who did not worry often.

Social support

Having support from a partner, other family members, or friends is associated with a reduced risk of mental health conditions during pregnancy and postpartum.[66-68] About 6.5% of birthing people lacked emotional support during pregnancy during 2020-2021 (data not shown).

Figure 14. People who did not have emotional support during pregnancy were more likely to experience depression or anxiety symptoms

Percentage of birthing people in California who experienced depression symptoms or anxiety symptoms by presence of emotional support during pregnancy, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

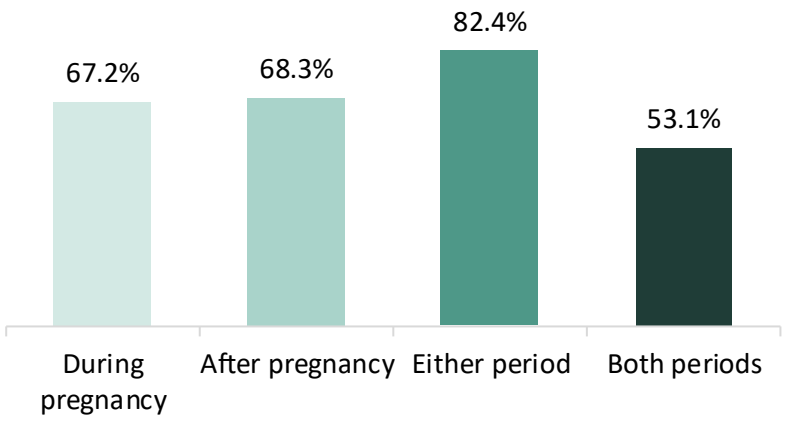
In California during 2020-2021, birthing people who reported not having emotional support during pregnancy were more likely to experience depression or anxiety symptoms (49.6%) than were birthing people who had emotional support (33.5%) (Figure 14). The impact of emotional support on depression or anxiety symptoms was similar across race and ethnic, age, and income groups (data not shown).

Screening for mental health conditions

Routine mental health screening that begins early in pregnancy can facilitate timely recognition of symptoms and therefore prevent adverse outcomes.[15,69,70] Several medical organizations, including the American College of Obstetricians and Gynecologists (ACOG), the United States Preventive Services Task Force (USPSTF), the American Academy of Pediatrics (AAP) and the American Psychiatric Association, recommend routine screening for depression and anxiety using a validated tool up to nine times from pregnancy through one year after giving birth.[69-72] In California, mental health screening is also increasingly performed by providers outside of health care settings, such as doulas and home visitors, or in group settings.

Figure 15. About two-thirds of California birthing people were screened for mental health conditions during pregnancy, and a similar percentage were screened after pregnancy

Percentage of birthing people in California who were screened for mental health conditions during pregnancy, after pregnancy, and in either period, 2020-2021



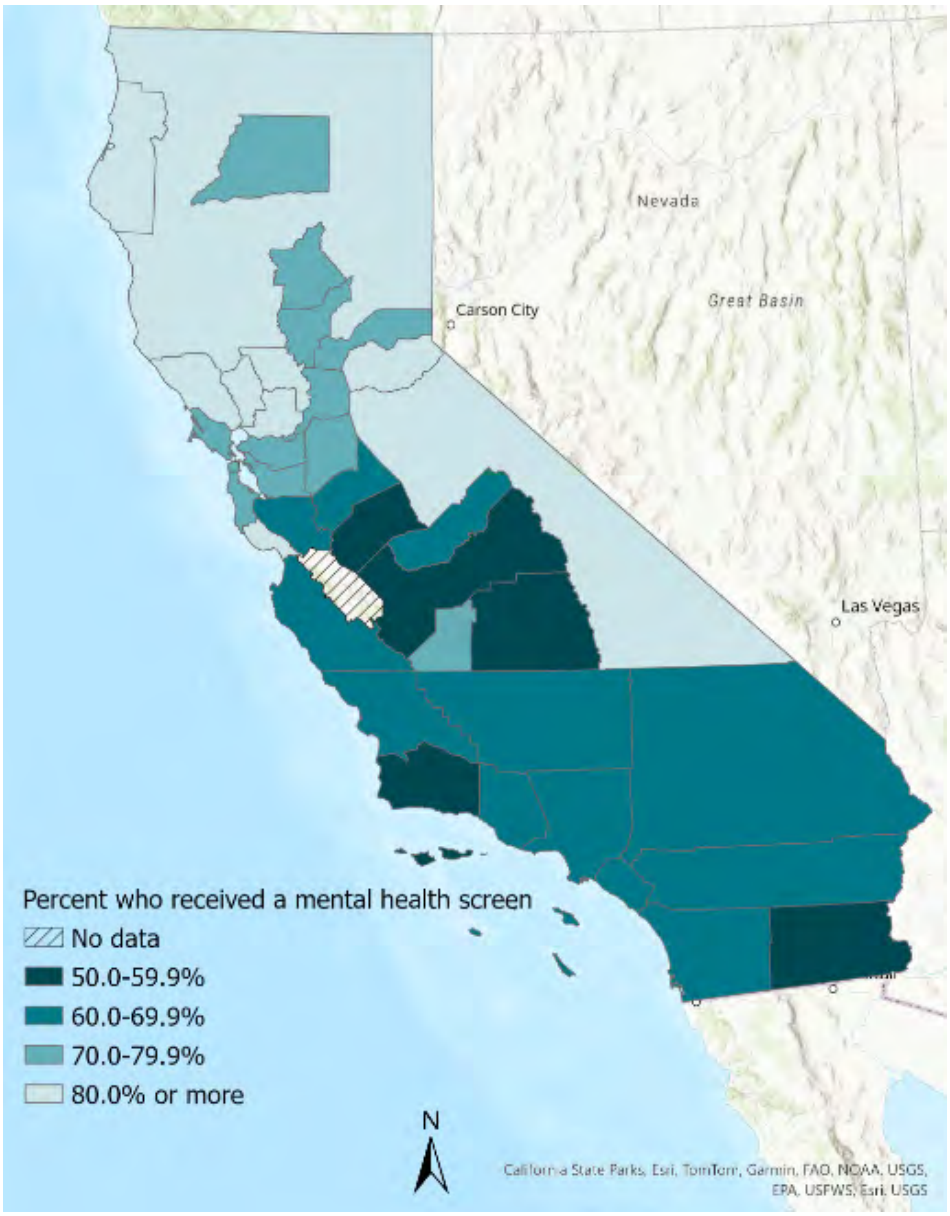
Source: Maternal and Infant Health Assessment, 2020-2021

During 2020-2021, 67.2% of California birthing people reported receiving a screening for mental health concerns during pregnancy, and 68.3% reported receiving a screening postpartum (Figure 15). Overall, 82.4% received a screening at least once during or after pregnancy, and 53.1% were screened both during and after pregnancy. Prenatal screening rates did not change between 2020 and 2021; the percentage who were screened postpartum increased from 65.8% in 2020 to 70.9% in 2021 (data not shown).

While most birthing people in California were screened for mental health conditions either during or after pregnancy, 16.0% of those who experienced depression or anxiety symptoms were never screened (data not shown). California birthing people who were covered by Medi-Cal were much more likely to never be screened for mental health conditions (25.2%) than were those who were covered by private insurance (10.1%) (data not shown). Among the 17.6% of all birthing people who received no screening, 98% had prenatal care and 76.2% had a postpartum visit, suggesting that low screening rates are not necessarily explained by low utilization of care (data not shown).

Figure 16. Fewer than 60% of birthing people received a prenatal mental health screening in Imperial, Merced, Santa Barbara, Fresno, and Tulare Counties

Percentage of birthing people in California who reported receiving a mental health screening during pregnancy, by county or region, 2020-2021



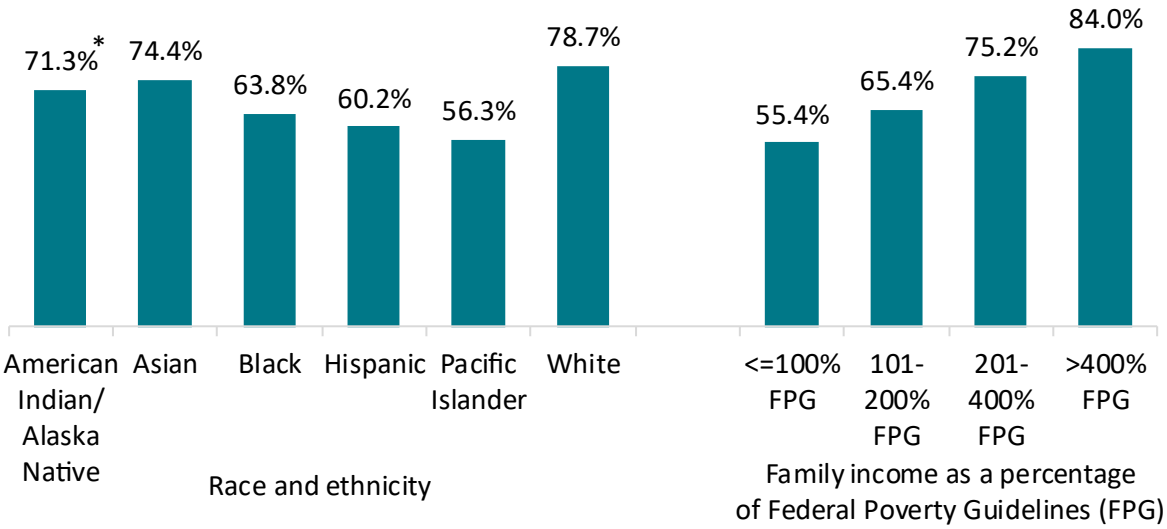
Source: Maternal and Infant Health Assessment, 2020-2021. Data are shown for the 35 largest counties in California; Sutter and Yuba county combined; and North/Mountain region counties. Data for San Benito County are not shown due to small sample size.

Receipt of prenatal mental health screening varied widely across the state (Figure 16). Birthing people in Santa Cruz, Solano, Napa, El Dorado, Humboldt, Sonoma, and Yolo Counties, as well as in the smaller northern or mountain counties, reported some of the

highest levels of prenatal screening. Residents of Imperial, Merced, Santa Barbara, Fresno, and Tulare Counties reported among the lowest levels of prenatal screening.

Figure 17. Fewer than two-thirds of Black, Hispanic, Pacific Islander, or low-income birthing people received mental health screenings after pregnancy

Percentage of birthing people in California who reported receiving a screening after pregnancy, by race and ethnicity and family income as a percentage of Federal Poverty Guidelines, 2020-2021

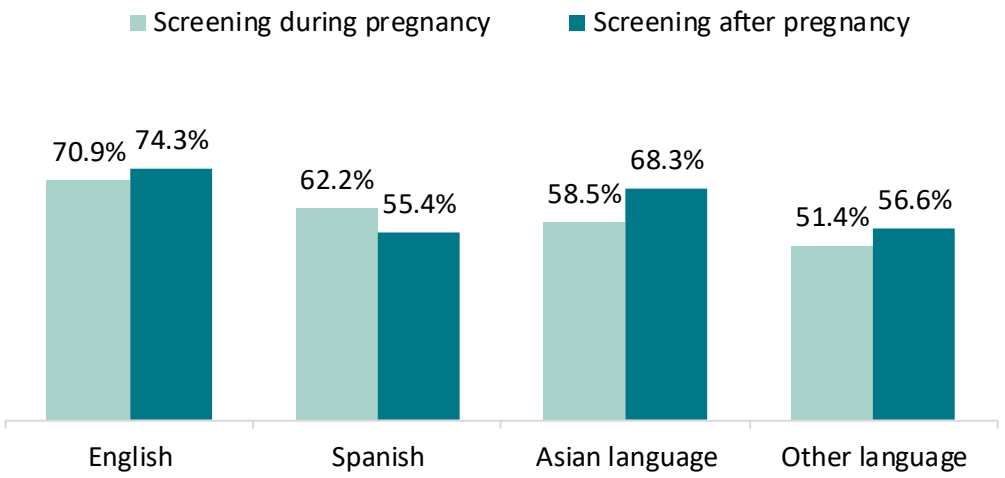


Source: Maternal and Infant Health Assessment, 2020-2021
**Estimate should be interpreted with caution due to low statistical reliability (RSE is between 30% and 50%).*

There were no significant differences in mental health screening *during* pregnancy by race and ethnicity or by family income. Inequities in screening were apparent *after* pregnancy, however. As shown in Figure 17, 78.7% of White birthing people were screened after pregnancy, while 74.4% of Asian, 71.3% of American Indian/Alaska Native, 63.8% of Black, 60.2% of Hispanic, and 56.3% of Pacific Islander birthing people were screened. Just over half (55.4%) of birthing people with incomes below federal poverty guidelines (FPG) received a postpartum screen, compared with 84.0% of those with incomes >400% FPG. Among birthing people who had a postpartum visit, and therefore had an opportunity to be screened, only 62.0% of those with family incomes at or below 100% FPG were screened, compared to 85.9% of those with incomes higher than 400% FPG (data not shown).

Figure 18. Birthing people who spoke Spanish or other languages at home were less likely than were English speakers to receive mental health screening

Percentage of birthing people in California who reported receiving a mental health screening during or after pregnancy, by language spoken at home, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Language barriers may also influence access to mental health care for some immigrants in the United States.[73,74] In California, birthing people who spoke only English at home were more likely than were speakers of other languages to report receiving a mental health screen during (70.9%) or after pregnancy (74.3%) (Figure 18). Only 62.2% of Spanish-speaking birthing people reported receiving a mental health screening during pregnancy, as did 58.5% of speakers of Asian languages, such as Chinese, Hindi, or Tagalog, and 51.4% of speakers of other languages, such as Arabic, French, Mixteco, or Russian. (Note: the MIHA survey is available in English and Spanish; MIHA data may be less able to accurately reflect experiences of people who do not speak English or Spanish.)

"I wish my postpartum depression was taken more seriously. I didn't feel like I had the help I needed."

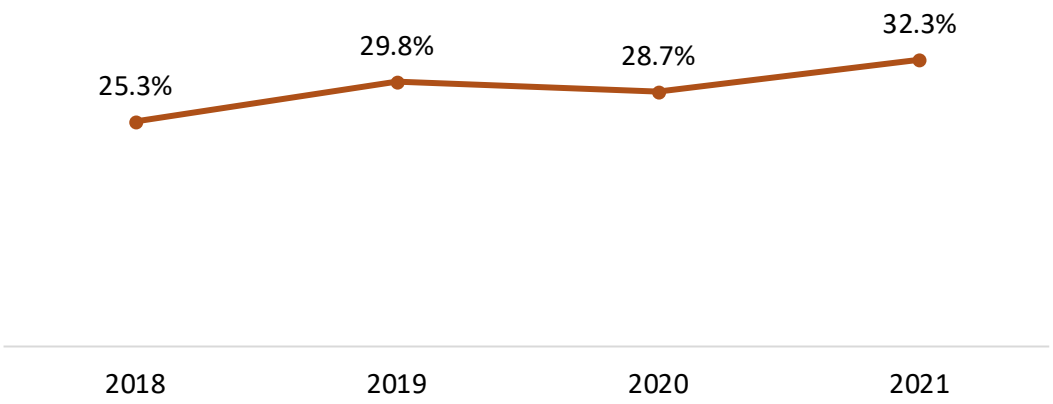
– MIHA 2021 participant, age 25, Los Angeles County

Perceived need for mental health care

Recognizing a need for mental health care is an important early step in seeking help for mental health conditions.[75] Many individuals who experience mental health disorders do not perceive that they need treatment.[76-78] Perceiving a need for care may be influenced by severity of the condition; knowledge, perceptions and stigma around mental health conditions and treatment; and social and cultural beliefs.[76-81] While perceived need varies by severity of symptoms and by race and ethnicity,[82,83] low perceived need is common even among those with severe disease and is a leading barrier to receipt of mental health care worldwide.[78]

Figure 19. Perceived need for mental health care increased between 2018 and 2021

Percentage of birthing people in California who perceived a need for mental health care, 2018-2021



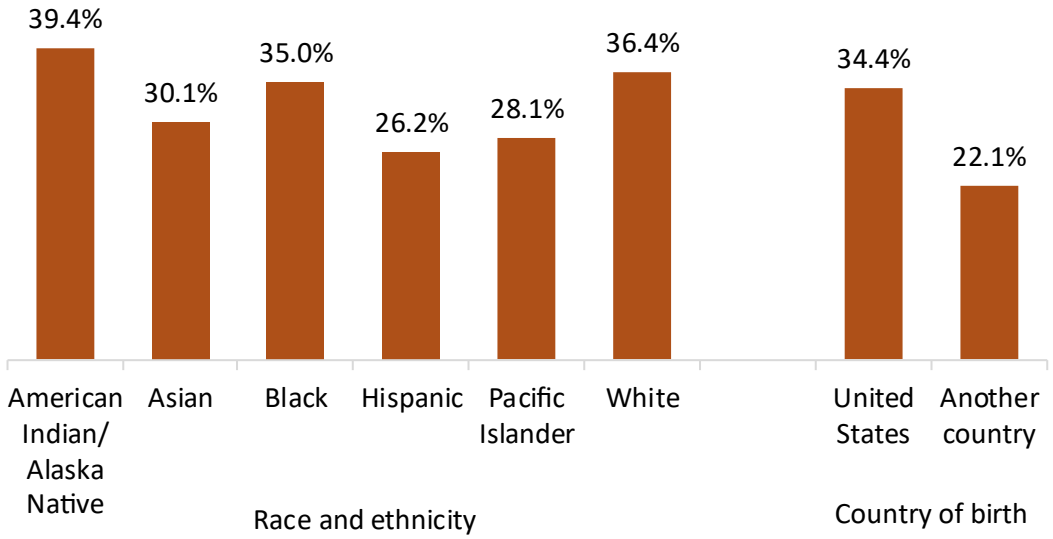
Source: Maternal and Infant Health Assessment, 2020-2021

The percentage of California birthing people who felt they needed help for a mental health condition during or after their pregnancies increased from one in four in 2018 (25.3%) to one in three in 2021 (32.3%) (Figure 19). Overall, during 2020-2021, 30.5% of birthing people felt they needed help for emotional well-being or mental health concerns during or after pregnancy.

Consistent with previous research, only 59.6% of birthing people in California who reported depression or anxiety symptoms perceived a need for mental health care. Among those who perceived a need for care, 33.2% did not report always or often experiencing depression or anxiety symptoms; some may have experienced less severe symptoms or needed care for other mental health conditions (data not shown).

Figure 20. Over one-third of birthing people who are American Indian/Alaska Native, White, Black or U.S. born perceived a need for mental health care

Percentage of birthing people in California who perceived a need for mental health care, by race and ethnicity and nativity, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Many birthing people believed they needed mental health care during or after pregnancy. Over one-third of American Indian/Alaska Native (39.4%), Black (35.0%), and White (36.4%) birthing people perceived a need for care, as did 26.2% of Hispanic, 28.1% of Pacific Islander, and 30.1% of Asian birthing people (Figure 20). Perceived need for care was much higher among those born in the U.S. (34.4%) than it was among those born in other countries (22.1%).

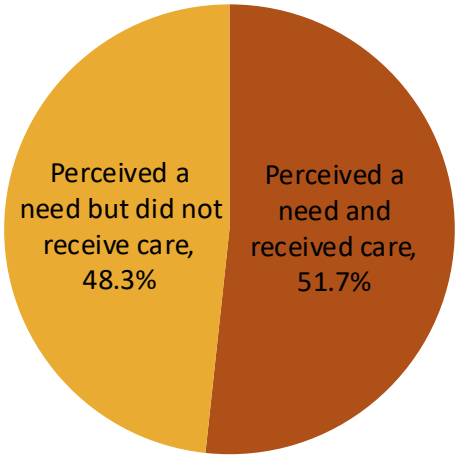
> *"Some form of support program/counseling should be provided to all women at no cost for a period after the baby comes. I know that they have a survey asking how you feel, but that is one small paper that oftentimes has many women falling through the cracks. If help was more accessible, it would prevent many mothers from suffering from postpartum depression/anxiety for so long."*
>
> *– MIHA 2020 participant, age 29, San Francisco Bay Area*

Receipt of mental health care

In MIHA, people who perceived a need for care were asked whether they received counseling or treatment from a doctor or mental health professional. Figures 21 through 24 are restricted to people who perceived a need for care. The pathway from the emergence of mental health symptoms and the recognized need for care to the receipt of treatment often involves multiple steps and complex interactions with various systems, organizations, and providers.[84-86] Even among those who perceive a need for mental health services, many do not receive care.

Figure 21. Only about half of people who perceived a need for care received it

Among birthing people in California who perceived a need for mental health care, the percentage who received care, 2020-2021

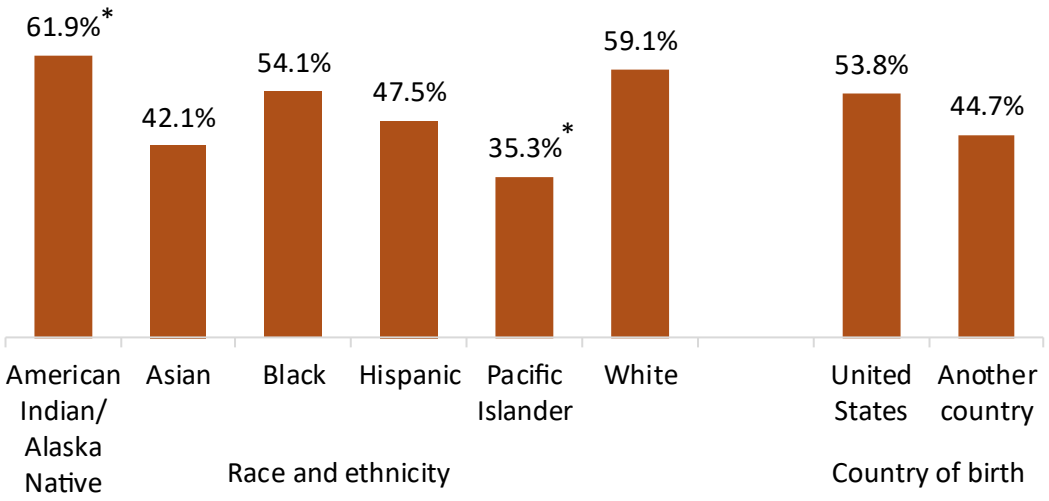


Source: Maternal and Infant Health Assessment, 2020-2021

In California during 2020-2021, just over half (51.7%) of birthing people who perceived a need for mental health care subsequently received counseling or treatment from a doctor or mental health professional (Figure 21).

Figure 22. Receipt of mental health care varied by race and ethnicity and by nativity

Among birthing people in California who perceived a need for mental health care, the percentage who received care, by maternal race and ethnicity and nativity, 2020-2021

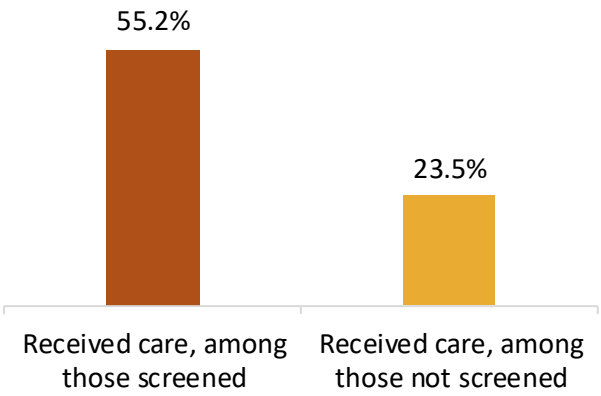


Source: Maternal and Infant Health Assessment, 2020-2021
**Estimate should be interpreted with caution due to low statistical reliability (RSE is between 30% and 50%).*

Over half of American Indian/Alaska Native (61.9%), White (59.1%), and Black (54.1%) birthing people who perceived a need for care during 2020-2021 received it. Only 47.5% of Hispanic, 42.1% of Asian, and 35.3% of Pacific Islander birthing people received mental health care they felt they needed (Figure 22). Those who were born in countries outside the United States were less likely (44.7%) than were those who were US-born (53.8%) to receive mental health care.

Figure 23. Birthing people who were screened for mental health conditions were more likely to receive mental health care than were those not screened

Among birthing people in California who perceived a need for mental health care, the percentage who received care, by mental health screening, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Among birthing people who perceived a need for care, being screened for a mental health condition was associated with a higher likelihood of receipt of care (Figure 23). Over half (55.2%) of birthing people who perceived a need and were screened received mental health care; only 23.5% of those who were not screened received care.

"I would like to see more proactive assistance for mothers dealing with postpartum depression. My doctor has been very good with checking on me with how I have been feeling with my [postpartum depression], but the resources to see a therapist have been difficult, either with unavailability or difficulty contacting a therapist."

– MIHA 2020 participant, age 32, Greater Sacramento area

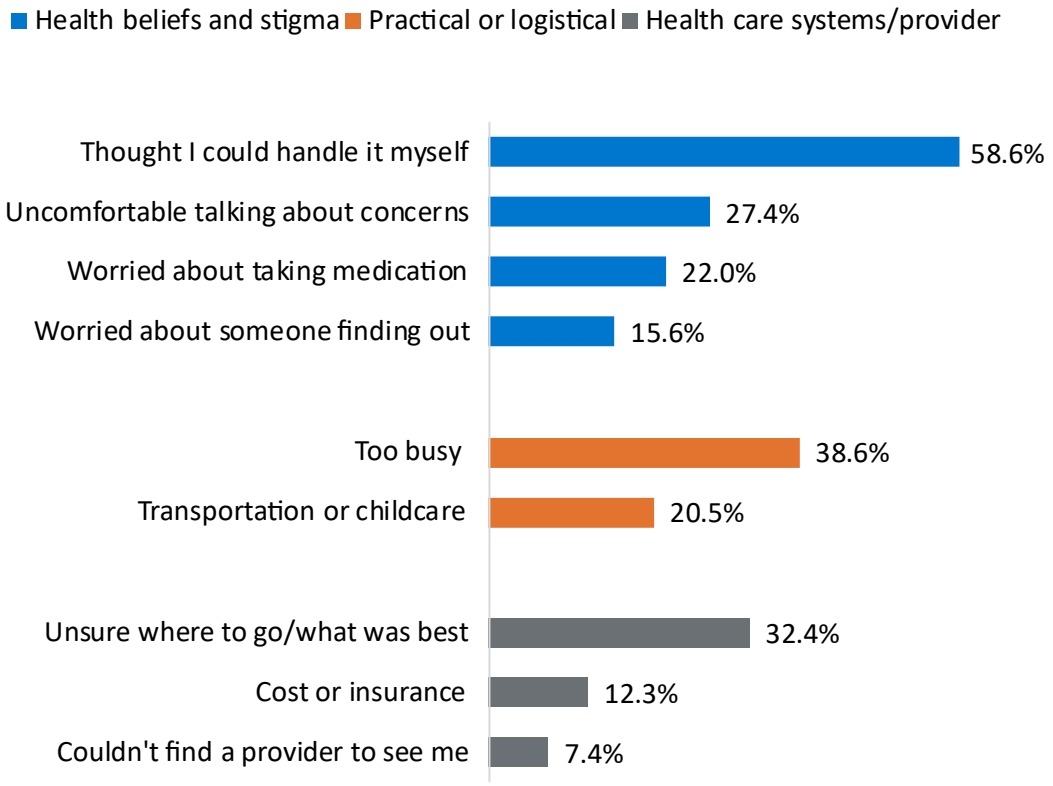
Barriers to mental health treatment

Researchers and practitioners have developed various frameworks to illustrate the processes of help-seeking and accessing mental health care and to explain the low levels of mental health treatment among people with mental health and emotional concerns.[84,87,88] Barriers to and facilitators of mental health care occur at multiple levels, such as societal, health care system, health care provider, and individual or patient. These factors can interact with one another; for example, stigma at the societal level may influence individual beliefs about mental health care.[88] Commonly identified

barriers and facilitators of care include beliefs and knowledge about mental illnesses, symptoms, and treatment; stigma surrounding mental health conditions; help-seeking behaviors; logistics and social support;[87] insurance coverage; and availability of services.[81] The MIHA survey assessed the prevalence of selected barriers to care among those who perceived a need for mental health care but did not receive it. These barriers included factors related to health beliefs or stigma, practical or logistical considerations, and health care systems and providers.

Figure 24. Individual health beliefs and stigma were the most common barriers to receipt of mental health care

Among birthing people in California who perceived a need for mental health care, the percentage reporting selected barriers to receipt of care, 2020-2021



Source: Maternal and Infant Health Assessment, 2020-2021

Health beliefs and stigma

Individual health beliefs have been shown to be influenced by stigma and societal norms about mental health and motherhood. These beliefs play a central role in mental health help-seeking and receipt of care. As shown in Figure 24, among birthing people who had a perceived need for mental health care but did not receive it, 58.6% reported that they did not think they needed help at the time or thought they could handle their concerns on their own. This was the most common barrier reported across all

demographic groups. Some respondents who reported this barrier mentioned in comments that they thought their symptoms would go away on their own. Some who felt they could handle their mental health symptoms on their own reported using informal treatment to cope with their mental health concerns, such as meditation, prayer, exercise, or other self-care strategies. Birthing people also reported using social support, such as talking to friends and family.

Mental health stigma prevents some individuals from seeking mental health care. Stigma-related barriers reported by birthing people in California include feeling uncomfortable talking about mental health concerns with anyone (27.4%) or being worried what would happen if someone found out (15.6%). Some birthing people avoid seeking mental health care due to concerns about child welfare involvement. U.S.-born birthing people were more likely to report concerns about someone finding out than were birthing people born in other countries (data not shown).

As has been shown in the literature,[89] concern about the safety of medication during or after pregnancy was also a barrier to seeking treatment. About 22.0% of birthing people reported worries about taking medication as a reason why they did not receive care (Figure 24).

Practical or logistical

Practical and logistical barriers were shown to impact access to mental health care as well (Figure 24). These barriers include birthing people being too busy (38.6%) or having challenges with transportation or childcare (20.5%). Difficulties with transportation or childcare were reported more frequently by birthing people with lower incomes or a greater number of children. Some respondents who reported practical or logistical barriers described issues such as the difficulty of getting out of the house with a new baby (data not shown).

Health care system or provider

Health care system and provider barriers reflect a range of difficulties navigating complex physical and mental health care delivery and insurance systems that can prevent birthing people from receiving mental health care (Figure 24). Among birthing people who perceived a need for care but did not receive treatment, 32.4% did not know where to go for care or what was best for them, 12.3% experienced barriers related to cost or insurance coverage, and 7.4% were unable to find a provider who would see them. Being “unable to find a provider who would see them” includes not being able to find a provider with availability and having a provider be unresponsive to attempts to schedule an appointment. Some respondents identified additional systems barriers, such as obstetrical providers not taking their concerns seriously or not referring them to mental health care, long waiting lists for care, and difficulties navigating mental health care systems (data not shown). Being unsure what was best was more commonly reported by those who had Medi-Cal coverage than it was by those who had private insurance coverage, and cost and insurance were more frequently reported as barriers by uninsured individuals (data not shown).

Additional factors

While not as commonly reported as the barriers shown in Figure 24, some respondents reported additional reasons for not seeking mental health care from a doctor or health care professional (data not shown). About 5.7% of birthing people reported that they received help for their mental health from a religious or spiritual leader rather than from a health care provider. A small number of birthing people mentioned additional factors such as feeling too overwhelmed or tired to seek care, reluctance to seek treatment due to prior poor experiences with mental health care, lack of provider cultural competency, and office closures related to the COVID-19 pandemic (data not shown).

Discussion

Mental health is a crucial part of overall health that is both impacted by and has an impact on an individual's personal, social, and economic development throughout life. Pregnant and postpartum people are at particularly high risk of developing mental health conditions due to physiological changes, such as hormonal fluctuations, and stressors. The mental health of mothers and other birthing people not only affects their own well-being but also impacts the mental health and development of the next generation.[2-8] Despite an increasing focus by public health agencies and professionals on the importance of mental health over the past several years, efforts to improve the prevention and treatment of maternal mental health conditions have lagged. Data on maternal mental health play a key role in guiding programs and policies designed to improve both the prevention and treatment of mental health conditions during and after pregnancy.

"Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships, and shape the world we live in. Mental health is a basic human right."

WHO Fact Sheet on Mental Health, June 2022

Summary

Depression and anxiety

This report presents new data on anxiety symptoms and improves the understanding of depression and anxiety symptoms experienced during or after pregnancy. Birthing people report anxiety symptoms more commonly than depression symptoms. Together, depression and anxiety symptoms impact 34.6% of California birthing people, or more than 140,000 California birthing people annually, and are on the rise. The implications for the health and well-being of birthing people and infants are important and require a large-scale response. Thankfully, evidence-based treatments for both depression and anxiety are available, and new approaches are being explored.[16,90] This is a public health problem that can be addressed.

Mental wellness is influenced by social, environmental, and economic factors in the places where people are born, live, work, learn, and play. Birthing people who experience stressors such as intimate partner violence, low income, lack of adequate housing, incarceration, separation or divorce, food insecurity, or problems with childcare or employment are more likely than are those without such stressors to report

depression or anxiety symptoms. Younger birthing people are also more likely than those who are older to report feeling depressed or anxious. Public health approaches that address the impact of stressors on depression and anxiety across the life course have the potential to prevent maternal mental health conditions among birthing people.[56]

Racism plays an important role in the mental health of Black birthing people and other birthing people of color. Black, Hispanic, and Asian birthing people who report often worrying about or experiencing racism during their lifetimes are over one and a half to two times more likely to report depression or anxiety symptoms during the perinatal period than are their counterparts who do not report worrying about or experiencing racism often.

Paradoxically, birthing people in California who were born in other countries report lower rates of depression or anxiety symptoms than do non-immigrants, even though many immigrants live in low-income areas and are more likely to experience trauma than are non-immigrants. While the PHQ-4 has been validated in diverse populations,[91] the lower rates among immigrants could reflect unmeasured differences in experience or reporting of mental health symptoms between immigrants and US-born individuals.[92-95]

The prevalence of depression or anxiety symptoms varies widely by region of California. Birthing people in rural counties have higher rates of depression symptoms than do those residing in much of the rest of the state. In California, most northern and mountain counties have fewer mental health providers per capita than do coastal counties, making treatment for positive screenings less accessible for residents of those areas.[96] Therefore, though their screening levels were high, it is possible that they were not able to receive adequate care for their mental health conditions.

Much of the data for this report came from study participants who gave birth during the COVID-19 pandemic period when people experienced uncertainty, fear, isolation, illness, and economic distress, all of which impact mental health.[57,97-99] The pandemic may have led to some of the increases in the prevalences of depression and anxiety seen among California birthing people and has the potential to impact mental health well into the future.[99,100] Additionally, sadness, hopelessness, anxiety, and suicidality have risen steeply among adolescent girls and young adults in recent years,[101,102] thereby increasing the risk of subsequent episodes of depression later in their lives.[103] It is reasonable to expect that the next generation of birthing people will enter pregnancy with higher risks of depression and other mental health conditions during and after pregnancy.

Screening during and after pregnancy

Data in this report reflect the experiences of birthing people in the years following the passage of California legislation requiring a mental health screening at least once during or after pregnancy. During 2020-2021, 82.4% of birthing people received screening at least once during or after pregnancy. While this is an important achievement, comparing the California screening rate to a different threshold illustrates how much work remains to be done. Both ACOG and the Patient Safety Bundle on

Perinatal Mental Health Conditions recommend that all birthing people are screened multiple times both during and after pregnancy.[69,104,105] In California, only about half of birthing people receive a mental health screening *both* during pregnancy *and* after pregnancy.

Unfortunately, in California, inequities in receipt of screening have the potential to compound unequal rates of depression or anxiety symptoms. Birthing people at higher risk of poor mental health, such as those who are low-income, younger, or Black, are less likely to be screened after pregnancy than are their counterparts, a difference not explained by variation in receipt of care during that time period across the groups. Given their higher risk, these birthing people should be the most likely to be screened.

Perceived need for and receipt of mental health care

Perceived need for mental health care is a recognized indicator of psychological distress and an important step in the care-seeking process.[77,106,107] Lack of perceived need among those with symptoms of psychological distress has been identified as a leading barrier to receipt of care for mental health concerns,[78] and 40.4% of birthing people in California who report often or always experiencing depression or anxiety symptoms do not report needing help with their mental health. This may result from a lack of knowledge about mental health or mental health treatment, a desire to avoid stigma, or cultural differences in the expression and interpretation of mental and emotional distress.[78,82,108]

Even when birthing people in California have a perceived need for mental health care, almost half do not receive treatment from a mental health professional. Receipt of care is even lower among those with higher risk of mental health concerns, such as those who are younger, Asian, Hispanic, or born outside the U.S., as compared to their counterparts.

Mental health screening may play an important role in improving receipt of professional treatment. In California, mental health screening is associated with a higher prevalence of perceived need for and receipt of care. While data in this analysis could not establish causality or the timing of treatment relative to screening, those who were screened were over twice as likely to receive care for a perceived need as were those who were not screened. The screening process could aid in the recognition that symptoms are related to a mental health concern[69] and could elevate perceived need for care, particularly if providers discuss mental health and treatment options and encourage care from a mental health provider.[109] Furthermore, mental health screening and treatment should occur in a context of respectful, non-stigmatizing, and culturally appropriate health care during and after pregnancy.[110]

Barriers to mental health treatment

Many birthing people in California experience multiple barriers to receipt of mental health treatment, including individual health beliefs and stigma, practical or logistical barriers, and health care system or provider barriers. The paradoxical finding that many birthing people who indicated a need for help with a mental health concern also thought

that they did not need to seek treatment at the time or could handle it themselves is consistent with findings from other studies.[81,85] Importantly, the desire to resolve mental health concerns without assistance has been shown to contribute to long delays between onset of mental health conditions and initial contact with a mental health professional[76,85,111] and can be an important barrier to care among those experiencing suicidal ideation.[111,112]

Ambivalence about or opposition to seeking needed treatment for mental health concerns at the individual level may be influenced by social, health system, and structural factors experienced by birthing people, who may also feel guilt and shame about experiencing mental distress during a time that is supposed to be joyous. Mental health impacts on daily functioning can contradict social norms of motherhood. Additionally, some people prefer informal mental health care[87] and may decide not to seek care from a medical or mental health professional. Finally, birthing people may not trust that the health care system will provide care in a destigmatizing and supportive way.[83]

Another leading barrier to mental health treatment reported by birthing people was being too busy, and transportation and childcare barriers were commonly experienced. Treatment modalities that reflect the challenges of caring for a new infant, such as video visits with providers, are more likely to be acceptable to postpartum people. Thoughtful attention to the leading barriers to mental health treatment can inform current efforts to improve the mental health system of care in California.

While health care systems and provider barriers were comparatively less common overall, birthing people reporting that they were unsure where to go or what was best for them reflects a need for affordable and easy to navigate health care and insurance systems, robust referral processes that support the transition into mental health care and improved mental health treatment literacy efforts. Beyond the need for streamlining services, improving coverage, and increasing the number of providers, there is a shortage of providers who are adequately trained in mental health for pregnant and postpartum people and who represent the populations of highest need.[19,113]

Implications

As with physical health, the promotion of mental wellness requires a broad range of strategies across the life course. Because anxiety is the most prevalent mental health condition, efforts to prevent, screen, and treat maternal mental health conditions during and after pregnancy must address anxiety as well as depression. While both pregnancy and the birth of a child present potential new risks for mental health, this time also offers an important opportunity for intervention for its improvement. To engage birthing people and ultimately improve their emotional well-being, a multi-pronged approach is likely to be most successful. Potential strategies include the following:

(a) continuing efforts to ameliorate the social and economic conditions that create stress and contribute to depression and anxiety symptoms;

(b) improving mental health literacy, specifically increasing knowledge about and reducing the stigma surrounding maternal mental health conditions and treatment options;

(c) ensuring respectful screening, free of stigma, with further assessment and referrals, as appropriate, at the frequencies recommended by best practices; and

(d) increasing the options for care, availability of care, and ensuring adequate insurance coverage for mental health screening and treatment.

Address social and economic impacts on mental health

Policies that improve social and economic well-being, such as reducing poverty and adverse childhood experiences, eliminating racism and anti-immigrant sentiment, and improving opportunities for education and employment, can have large impacts on mental health.[34] Because social and economic determinants of health are at the root of all health outcomes, it is critical to work across sectors beyond health.

- Policy approaches shown to improve financial stability for families and reduce financial stress for parents of infants include maintaining robust safety net services,[114] providing unconditional monthly payments to low-income people,[115] expanding child tax credits,[116] and providing free diapers.[117]
- High-quality, affordable childcare and preschool enable family financial stability and reduce maternal burdens. Center-based early childcare has been shown to support parental mental health and may also buffer the negative effects of maternal depression on child mental health.[118]
- Experience of and worry about racial discrimination impacts mental health. Provider education and training programs that eliminate racial biases and racist practices in clinical settings are important steps toward eliminating the stress related to racism. California law requires that maternity care providers undergo implicit bias training. Adding anti-racism training to that requirement would further improve care.
- Positive relationships and social support are protective against prenatal[66] and postpartum[67,119] symptoms of depression and anxiety. MCAH Division programs foster social support while also promoting educational attainment and financial stability;[120] these programs include home visitation offered through the California Home Visiting Program,[121] the Black Infant Health Program,[122] and the Adolescent Family Life Program.[123]

Increase mental health literacy

The high percentage of California birthing people with depression or anxiety symptoms who did not think they needed care, including those who thought they could handle their mental health concerns on their own, suggests an opportunity for improving maternal mental health literacy, or knowledge and beliefs about maternal mental health

conditions and the role of treatment[81] among the birthing population and their families. Interventions that increase perceived need for treatment may help reduce disparities in utilization of mental health care.

- Health communications campaigns can address social norms, influence behavior, and increase mental health literacy and help-seeking behaviors. Examples of maternal mental health-related campaigns include the following: TheBlueDotProject; Maternal Mental Health Awareness Week; Shades of Blue, which focuses on maternal mental health among Black birthing people; and the Centers for Disease Control and Prevention's HEAR HER Campaign.
- Education by providers during prenatal and postpartum care can raise pregnant people's awareness of and help to de-stigmatize mental health conditions. California's Maternal Mental Health Conditions Education, Early Diagnosis, and Treatment Act, which went into effect in 2020, requires that hospitals provide education both to providers and to birthing people and their families about maternal mental health conditions, treatment options, and community resources.

Improve screening and referral

Routine screening during and after pregnancy for mental health conditions should be conducted more than once during and after pregnancy; minimally, it would happen at the beginning and end of pregnancy and at the first postpartum visit, and, ideally, it would happen at other obstetric visits, as well as at pediatric visits during the first year of the baby's life.[69,104,124] Screening can increase recognition of the need for mental health treatment, open the door for providers to educate birthing people about the symptoms of mental health conditions and the effectiveness of treatment, and enable diagnosis, referral, and treatment among those who screen positive. All those providing care to birthing people should pay particular attention to circumstances and stressors that increase the risk of maternal depression or anxiety, such as young age, lack of social support, low income, and intimate partner violence. When providing care to birthing people of color, providers also should acknowledge the potential impact of racism and xenophobia on mental health. Several strategies are available to increase screening for maternal mental health conditions.

- California passed legislation that requires obstetric providers to confirm that screening for maternal mental health conditions has occurred at least once during or after pregnancy and to screen if it has not.[125] More recent California legislation[126] requires that health insurers develop maternal mental health programs that consist of at least one maternal mental health screening during pregnancy, at least one screening during the first 6 weeks of the postpartum period, and additional postpartum screenings if medically necessary. While legislation is an important step, it cannot ensure universal screening for California's birthing population on its own without accountability provisions.

- In 2021, the Healthcare Effectiveness Data and Information Set® (HEDIS®) added measurement tools that can help monitor compliance with screening legislation. Since 2024, the California Department of Health Care Services has required Medi-Cal Managed Care Plans and commercial plans/insurers that obtain National Committee for Quality Assurance accreditation to report on depression screening and follow-up.[127] Measurement could be improved by adding other common conditions, such as anxiety. California law implemented in July 2023 requires the use of health care quality measures in maternal mental health programs to ensure screening, diagnosis, treatment, and referral.[128]
- The AAP recommends screening for postpartum depression at well-child visits at 1, 2, 4, and 6 months of age. While screening in pediatric practices is billable and has increased over the past decades, research suggests that it is far from universal in that setting.[129]
- Ensuring that maternal mental health screening also happens outside of medical care can help to ensure that no one with a mental health need is missed. With appropriate training of providers and caregivers, screening can take place in interactions such as a home visit or a case management appointment.
- Whether within or outside of medical care, the USPSTF and ACOG emphasize that screening implementation requires adequate systems to be in place for timely and accurate diagnoses, effective treatment, and adequate follow-up.[70,124]
- Research is needed to assess the cultural and linguistic appropriateness of currently existing screening tools among diverse populations.[130] Modification of existing assessments or development of new ones may be needed to accurately assess mental health symptoms among indigenous, immigrant, refugee, and other marginalized birthing people.[130-133]

Improve access to a wide range of treatment options

Depression and anxiety during and after pregnancy are treatable,[16,90] and efforts to increase screening must be complemented by efforts to expand and ensure the availability of a range of treatment options. Pregnant and postpartum individuals who screen positive for mental health concerns report a desire for flexible and varied mental health treatment opportunities[86] that also include informal treatment, such as peer support and family and group classes.[87] Current medical and mental health providers, insurance, and health care systems are fragmented.[134] Strategies that could improve access to a wide range of treatment options include strengthening California's mental health workforce, improving coverage and payment for mental health care, integrating mental health more strongly into obstetric and primary care for birthing people, and expanding mental health care treatment options and modes of delivery.

Strengthen the mental health workforce

- To adequately respond to California's severe and worsening shortage of health and mental health workers and lack of diversity in the workforce,[135] California can protect and build upon the successful implementation of several actions recommended by the California Future Health Workforce Commission. Examples include state funding for scholarships and loan repayment for mental health care provider training, expansion of psychiatry fellowships and psychiatric residencies, and increases in the certification, training, and reimbursement of behavioral health peer providers.[136,137]

Improve coverage and payment

- To improve financial access to mental health care, the federal Mental Health Parity and Addiction Equity Act (for employer-sponsored plans) and the Affordable Care Act (for plans in the Marketplace) require costs and care restrictions for mental health to be the same as other medical conditions. California legislation goes further by requiring health plans and insurers to cover treatment for all conditions in the Diagnostic and Statistical Manual of Mental Disorders and by setting standards for medically necessary treatment.[138] Despite this legislation, challenges remain, including shortage of in-network providers, low reimbursement rates, and burdensome processes for care authorization and reimbursement.[139] Potential strategies to further improve financial access include the enforcement of standards requiring provider directories to include a sufficient number and geographic distribution of mental health providers and list only those who are practicing, accepting new patients, and in-network.[140]
- Medi-Cal now covers birthing people up to 12 months after the baby is born. New services include family therapy and dyadic services, even for individuals who do not have a diagnosis but experience specific risk factors for a mental health condition.[141,142] The number of maternal mental health providers who accept Medi-Cal will need to increase greatly to fully realize the potential of these expansions.

Integrate maternal mental health care into obstetric and other primary care practice

- The Perinatal Mental Health Conditions Patient Safety Bundle[105] includes multidisciplinary guidance for integrating mental health care screening and referral into the health care workflow during and after pregnancy.
- Training for providers is an important component of improving perinatal mental health screening and treatment. The Maternal Mental Health Conditions Education, Early Diagnosis, and Treatment Act requires that California birthing hospitals train their labor and delivery staff on maternal mental health disorders. Online training resources are also available for obstetricians, family practice physicians, nurse practitioners, and other frontline primary care providers.[143,144] Adequate maternal mental health training should also be built into the educational systems of pediatricians, home visitors, doulas, therapists, and other providers.[134]

Expand mental health care options and accessibility

- Telehealth delivery of mental health care is effective.[145] Telehealth may reduce barriers to accessing mental health care, particularly in rural areas[146] and can help overcome barriers such as transportation, childcare, and lack of local access to a provider; it is typically a billable service.
- Support provided by peers from the community who share similar cultural values and have the lived experience of recovery from a mental health condition is another important treatment option.[147,148] Peer support improves quality of life, empowerment, and engagement with treatment services and builds feelings of trust, respect, and humanity more quickly than does treatment by traditional providers.[147,149] Recent California legislation created a new certification to facilitate billing to Medi-Cal for peer support services.[150]
- Hotlines offer easy and direct access to support, information, and referrals for individuals with mental health concerns and their family members. There are several hotlines that should be widely promoted, including the National Maternal Mental Health Hotline (1-833-TLC-MAMA; 1-833-852-6262). Education campaigns could improve awareness and utilization of hotlines.

Conclusion

Mental health concerns are among the most common complications of pregnancy and childbirth. To reduce the prevalence of depression and anxiety during this vulnerable period, birthing people must experience improved living circumstances, increased social support, and reduced exposure to racism and other stressors across the life course. For those with maternal mental health conditions, the pathway from screening and recognition of symptoms to treatment can be complicated and difficult to navigate. Improving California's low rates of treatment among those with depression or anxiety symptoms requires multiple strategies, such as improving maternal mental health literacy among birthing people and providers, ensuring respectful screening and referral at multiple points during and after pregnancy, and streamlining access to care by strengthening the mental health workforce, improving insurance coverage, integrating mental health into obstetric and pediatric care, and expanding maternal mental health treatment options. Preventing mental health conditions and ensuring adequate treatment for those who experience mental health symptoms during and after pregnancy both have the potential to advance the well-being of birthing people and of their families for years to come. While there has been notable progress in recent years, public health and health care systems have a long way to go. Despite challenges ahead, California must not lose sight of a vision in which all mothers, parents, babies, and families experience emotional well-being and positive relationships. This will require redoubling efforts to ensure that all California birthing people receive the mental health care they need.

“I am currently involved in therapy for postpartum depression. I have struggled with depression for a majority of my life, and it became most prevalent with my new baby. I feel affordable therapy should be available to all. I feel very fortunate to be receiving the help that I am.”

– MIHA 2021 participant, age 23, North/Mountain Area

References

[1] Mental health. World Health Organization (WHO). June 17, 2022. Accessed June 8, 2023. https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

[2] Atif N, Lovell K, Rahman A. Maternal mental health: The missing “m” in the global maternal and child health agenda. *Semin Perinatol*. 2015;39(5):345-352. doi:10.1053/j.semperi.2015.06.007

[3] Kimmel M. Maternal Mental Health MATTERS. *N C Med J*. 2020;81(1):45-50. doi:10.18043/ncm.81.1.45

[4] Voit FAC, Kajantie E, Lemola S, Räikkönen K, Wolke D, Schnitzlein DD. Maternal mental health and adverse birth outcomes. *PLOS ONE*. 2022;17(8):e0272210. doi:10.1371/journal.pone.0272210

[5] Field T. Prenatal depression effects on early development: a review. *Infant Behav Dev*. 2011;34(1):1-14. doi:10.1016/j.infbeh.2010.09.008

[6] Koutra K, Chatzi L, Bagkeris M, Vassilaki M, Bitsios P, Kogevinas M. Antenatal and postnatal maternal mental health as determinants of infant neurodevelopment at 18 months of age in a mother–child cohort (Rhea Study) in Crete, Greece. *Soc Psychiatry Psychiatr Epidemiol*. 2013;48(8):1335-1345. doi:10.1007/s00127-012-0636-0

[7] Rogers A, Obst S, Teague SJ, et al. Association Between Maternal Perinatal Depression and Anxiety and Child and Adolescent Development: A Meta-analysis. *JAMA Pediatr*. 2020;174(11):1082-1092. doi:10.1001/jamapediatrics.2020.2910

[8] Sayres Van Niel M, Payne JL. Perinatal depression: A review. *Cleve Clin J Med*. 2020;87(5):273-277. doi:10.3949/ccjm.87a.19054

[9] Alliance for Innovation on Maternal Health. *Patient Safety Bundles*.; 2023. https://saferbirth.org/patient-safety-bundles/

[10] Andrade LH, Alonso J, Mneimneh Z, et al. Barriers to mental health treatment: results from the WHO World Mental Health surveys. *Psychol Med*. 2014;44(6):1303-1317. doi:10.1017/S0033291713001943

[11] Mojtabai R, Olfson M, Sampson NA, et al. Barriers to mental health treatment: results from the National Comorbidity Survey Replication. *Psychol Med*. 2011;41(8):1751-1761. doi:10.1017/S0033291710002291

[12] Schomerus G, Stolzenburg S, Freitag S, et al. Stigma as a barrier to recognizing personal mental illness and seeking help: a prospective study among untreated persons with mental illness. *Eur Arch Psychiatry Clin Neurosci*. 2019;269:469-479.

[13] Milgrom J, Gemmill AW, Bilszta JL, et al. Antenatal risk factors for postnatal depression: A large prospective study. *J Affect Disord*. 2008;108(1):147-157. doi:10.1016/j.jad.2007.10.014

[14] Hutchens BF, Kearney J. Risk Factors for Postpartum Depression: An Umbrella Review. *J Midwifery Womens Health*. 2020;65(1):96-108. doi:10.1111/jmwh.13067

[15] O'Hara MW, Wisner KL. Perinatal mental illness: definition, description and aetiology. *Best Pract Res Clin Obstet Gynaecol*. 2014;28(1):3-12. doi:10.1016/j.bpobgyn.2013.09.002

[16] Misri S, Abizadeh J, Sanders S, Swift E. Perinatal Generalized Anxiety Disorder: Assessment and Treatment. *J Womens Health*. 2015;24(9):762-770. doi:10.1089/jwh.2014.5150

[17] Cox EQ, Sowa NA, Meltzer-Brody SE, Gaynes BN. The Perinatal Depression Treatment Cascade: Baby Steps Toward Improving Outcomes. *J Clin Psychiatry*. 2016;77(9):20901. doi:10.4088/JCP.15r10174

[18] Luca DL, Margiotta C, Staatz C, Garlow E, Christensen A, Zivin K. Financial Toll of Untreated Perinatal Mood and Anxiety Disorders Among 2017 Births in the United States. *Am J Public Health*. 2020;110(6):888-896. doi:10.2105/AJPH.2020.305619

[19] Moore JE, McLemore MR, Glenn N, Zivin K. Policy Opportunities To Improve Prevention, Diagnosis, And Treatment Of Perinatal Mental Health Conditions. *Health Aff Proj Hope*. 2021;40(10):1534- 1542. doi:10.1377/hlthaff.2021.00779

[20] Leigh B, Milgrom J. Risk factors for antenatal depression, postnatal depression and parenting stress. *BMC Psychiatry*. 2008;8(1):24. doi:10.1186/1471-244X-8-24

[21] Lancaster CA, Gold KJ, Flynn HA, Yoo H, Marcus SM, Davis MM. Risk factors for depressive symptoms during pregnancy: a systematic review. *Am J Obstet Gynecol*. 2010;202(1):5-14.

[22] Lindahl V, Pearson JL, Colpe L. Prevalence of suicidality during pregnancy and the postpartum. *Arch Womens Ment Health*. 2005;8(2):77-87. doi:10.1007/s00737-005-0080-1

[23] *The California Pregnancy-Associated Mortality Review Report: Pregnancy-Associated Suicide, 2002- 2012*. California Department of Public Health, Maternal, Child and Adolescent Health Division; 2019.

[24] Yu H, Shen Q, Bränn E, et al. Perinatal depression and risk of suicidal behavior. *JAMA Netw Open*. 2024;7(1):e2350897-e2350897.

[25] Kurki T, Hiilesmaa V, Raitasalo R, Mattila H, Ylikorkala O. Depression and anxiety in early pregnancy and risk for preeclampsia. *Obstet Gynecol*. 2000;95(4):487-490. doi:10.1016/s0029- 7844(99)00602-x

[26] McKee K, Admon LK, Winkelman TNA, et al. Perinatal mood and anxiety disorders, serious mental illness, and delivery-related health outcomes, United States, 2006–2015. *BMC Womens Health*. 2020;20(1):150. doi:10.1186/s12905-020-00996-6

[27] Field T. Prenatal anxiety effects: A review. *Infant Behav Dev*. 2017;49:120-128. doi:10.1016/j.infbeh.2017.08.008

[28] Stuart-Parrigon K, Stuart S. Perinatal Depression: An Update and Overview. *Curr Psychiatry Rep*. 2014;16(9):468. doi:10.1007/s11920-014-0468-6

[29] Paul IM, Downs DS, Schaefer EW, Beiler JS, Weisman CS. Postpartum Anxiety and Maternal-Infant Health Outcomes. *Pediatrics*. 2013;131(4):e1218-e1224. doi:10.1542/peds.2012-2147

[30] Grigoriadis S, Graves L, Peer M, et al. A systematic review and meta-analysis of the effects of antenatal anxiety on postpartum outcomes. *Arch Womens Ment Health*. 2019;22(5):543-556. doi:10.1007/s00737-018-0930-2

[31] Tirumalaraju V, Suchting R, Evans J, et al. Risk of Depression in the Adolescent and Adult Offspring of Mothers With Perinatal Depression: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2020;3(6):e208783. doi:10.1001/jamanetworkopen.2020.8783

[32] MacIntyre MM, Zare M, Williams MT. Anxiety-Related Disorders in the Context of Racism. *Curr Psychiatry Rep*. 2023;25(2):31-43. doi:10.1007/s11920-022-01408-2

[33] Elizabeth Krause, Shelley Waters Boots, Lena O' Rourke, Ed Walz. *Maternal Mental Health: An Urgent Priority*. Perigee Fund; 2022. Accessed June 8, 2023. https://perigeefund.org/wp- content/uploads/2021/10/MMH-report.pdf

[34] Shim RS, Compton MT. Addressing the Social Determinants of Mental Health: If Not Now, When? If Not Us, Who? *Psychiatr Serv*. 2018;69(8):844-846. doi:10.1176/appi.ps.201800060

[35] Segre LS, Mehner BT, Brock RL. Perceived racial discrimination and depressed mood in perinatal women: an extension of the domain specific stress index. *Womens Health Issues*. 2021;31(3):254- 262.

[36] Clark C, Ryan L, Kawachi I, Canner MJ, Berkman L, Wright RJ. Witnessing community violence in residential neighborhoods: a mental health hazard for urban women. *J Urban Health*. 2008;85:22- 38.

[37] Laurenzi C, Field S, Honikman S. Food insecurity, maternal mental health, and domestic violence: a call for a syndemic approach to research and interventions. *Matern Child Health J*. 2020;24:401- 404.

[38] Carter JG, Feinglass JM, Yee LM. Perception of Neighborhood Safety and Maternal and Neonatal Health Outcomes. *JAMA Netw Open*. 2023;6(5):e2317153-e2317153.

[39] Alegría M, NeMoyer A, Falgàs Bagué I, Wang Y, Alvarez K. Social determinants of mental health: where we are and where we need to go. *Curr Psychiatry Rep*. 2018;20:1-13.

[40] Modi H, Orgera K, Grover A. *Barriers to Mental Health Care*. Association of American Medical Colleges; 2022.

[41] Barkin JL, Osborne LM, Buoli M, Bridges CC, Callands TA, Ezeamama AE. Training frontline providers in the detection and management of perinatal mood and anxiety disorders. *J Womens Health*. 2020;29(7):889.

[42] Garbarino AH, Kohn JR, Coverdale JH, Kilpatrick CC. Current trends in psychiatric education among obstetrics and gynecology residency programs. *Acad Psychiatry*. 2019;43:294-299.

[43] Cantwell R. Mental disorder in pregnancy and the early postpartum. *Anaesthesia*. 2021;76:76-83.

[44] O'Connor C, Brassil M, O'Sullivan S, Seery C, Nearchou F. How does diagnostic labelling affect social responses to people with mental illness? A systematic review of experimental studies using vignette-based designs. *J Ment Health*. 2022;31(1):115-130.

[45] CA Policy. Policy Center for Maternal Mental Health. Accessed June 8, 2023. https://www.2020mom.org/ca-policy

[46] Maternal Mental Health. California Department of Public Health (CDPH). Accessed December 4, 2023. https://www.cdph.ca.gov/Programs/CFH/DMCAH/Pages/Communications/Maternal-Mental-Health.aspx

[47] Kroenke K, Spitzer RL, Williams JBW, Löwe B. The Patient Health Questionnaire Somatic, Anxiety, and Depressive Symptom Scales: a systematic review. *Gen Hosp Psychiatry*. 2010;32(4):345-359. doi:10.1016/j.genhosppsych.2010.03.006

[48] Mills SD, Fox RS, Pan TM, Malcarne VL, Roesch SC, Sadler GR. Psychometric Evaluation of the Patient Health Questionnaire-4 in Hispanic Americans. *Hisp J Behav Sci*. 2015;37(4):560-571. doi:10.1177/0739986315608126

[49] Barrera AZ, Moh YS, Nichols A, Le HN. The Factor Reliability and Convergent Validity of the Patient Health Questionnaire-4 Among an International Sample of Pregnant Women. *J Womens Health*. 2021;30(4):525-532. doi:10.1089/jwh.2020.8320

[50] Zahnd E. *Contra Costa County Women Infants & Children (WIC) Perinatal Depression Screening, Education and Referral Project WIC PHQ9 and PHQ4 Validation Study Report*. Contra Costa Health; 2011.

[51] Bauman BL. Vital Signs: Postpartum Depressive Symptoms and Provider Discussions About Perinatal Depression — United States, 2018. *MMWR Morb Mortal Wkly Rep*. 2020;69. doi:10.15585/mmwr.mm6919a2

[52] Blackmore ER, Gustafsson H, Gilchrist M, Wyman C, G O'Connor T. Pregnancy-related anxiety: Evidence of distinct clinical significance from a prospective longitudinal study. *J Affect Disord*. 2016;197:251-258. doi:10.1016/j.jad.2016.03.008

[53] Anxiety Disorders. National Alliance on Mental Illness (NAMI). 2017. Accessed June 8, 2023. https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Anxiety-Disorders

[54] Pollack LM, Chen J, Cox S, et al. Healthcare Utilization and Costs Associated With Perinatal Depression Among Medicaid Enrollees. *Am J Prev Med*. 2022;62(6):e333-e341. doi:10.1016/j.amepre.2021.12.008

[55] Baron E, Bass J, Murray SM, Schneider M, Lund C. A systematic review of growth curve mixture modelling literature investigating trajectories of perinatal depressive symptoms and associated risk factors. *J Affect Disord*. 2017;223:194-208. doi:10.1016/j.jad.2017.07.046

[56] Colman I, Ataullahjan A. Life course perspectives on the epidemiology of depression. *Can J Psychiatry Rev Can Psychiatr*. 2010;55(10):622-632. doi:10.1177/070674371005501002

[57] Blanchflower DG, Bryson A. Covid and mental health in America. *PLOS ONE*. 2022;17(7):e0269855. doi:10.1371/journal.pone.0269855

[58] Data Table 2: 12-month prevalence DSM-IV/WMH-CIDI disorders by sex and cohort. Harvard Medical School. Published online July 19, 2007. Accessed June 22, 2023. https://www.hcp.med.harvard.edu/ncs/index.php

[59] Paradies Y, Ben J, Denson N, et al. Racism as a determinant of health: a systematic review and meta-analysis. *PloS One*. 2015;10(9):e0138511.

[60] Whitaker RC, Phillips SM, Orzol SM. Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their preschool-aged children. *Pediatrics*. 2006;118(3):e859- e868.

[61] Sareen J, Afifi TO, McMillan KA, Asmundson GJ. Relationship between household income and mental disorders: findings from a population-based longitudinal study. *Arch Gen Psychiatry*. 2011;68(4):419-427.

[62] Carlson D. Stressful Life Events. In: *Encyclopedia of Quality of Life and Well-Being Research*. Springer Dordrecht; 2014. https://doi.org/10.1007/978-94-007-0753-5_2880

[63] Hunte R, Klawetter S, Paul S. "Black Nurses in the Home is Working": Advocacy, Naming, and Processing Racism to Improve Black Maternal and Infant Health. *Matern Child Health J*. 2022; 26:933-940.

[64] Bower KM, Geller RJ, Jeffers N, McDonald M, Alhusen J. Experiences of racism and perinatal depression: Findings from the pregnancy risk assessment monitoring system, 2018. *J Adv Nurs*. 2023;79(5):1982-1993. doi:10.1111/jan.15519

[65] LaVeist TA, Thorpe Jr. RJ, Pierre G, Mance GA, Williams DR. The Relationships among Vigilant Coping Style, Race, and Depression. *J Soc Issues*. 2014;70(2):241-255. doi:10.1111/josi.12058

[66] Bedaso A, Adams J, Peng W, Sibbritt D. The relationship between social support and mental health problems during pregnancy: a systematic review and meta-analysis. *Reprod Health*. 2021;18(1):162. doi:10.1186/s12978-021-01209-5

[67] Feinberg E, Declercq E, Lee A, Belanoff C. The Relationship between Social Support and Postnatal Anxiety and Depression: Results from the Listening to Mothers in California Survey. *Womens Health Issues*. 2022;32(3):251-260. doi:10.1016/j.whi.2022.01.005

[68] Sufredini F, Catling C, Zugai J, Chang S. The effects of social support on depression and anxiety in the perinatal period: A mixed-methods systematic review. *J Affect Disord*. 2022;319(15):119-141. doi:10.1016/j.jad.2022.09.005

[69] ACOG Committee Opinion No. 757 Summary: Screening for Perinatal Depression. *Obstet Gynecol*. 2018;132(5):1314-1316. doi:10.1097/AOG.0000000000002928

[70] Siu AL, and the US Preventive Services Task Force (USPSTF). Screening for Depression in Adults: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2016;315(4):380-387. doi:10.1001/jama.2015.18392

[71] Earls MF, Yogman MW, Mattson G, et al. Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice. *Pediatrics*. 2019;143(1):e20183259. doi:10.1542/peds.2018- 3259

[72] *Position Statement on Screening and Treatment of Mood and Anxiety Disorders During Pregnancy and Postpartum*. American Psychiatric Association; 2018. Accessed January 17, 2023. https://www.psychiatry.org/getattachment/c5db4e7b-6405-4655-aecb-bc79d5efb4ea/Position- Screening-and-Treatment-Mood-Anxiety-Disorders-During-Pregnancy-Postpartum.pdf

[73] Derr AS. Mental Health Service Use Among Immigrants in the United States: A Systematic Review. *Psychiatr Serv*. 2016;67(3):265-274. doi:10.1176/appi.ps.201500004

[74] Sentell T, Shumway M, Snowden L. Access to Mental Health Treatment by English Language Proficiency and Race/Ethnicity. *J Gen Intern Med*. 2007;22(2):289-293. doi:10.1007/s11606-007- 0345-7

[75] Villatoro AP, Mays VM, Ponce NA, Aneshensel CS. Perceived Need for Mental Health Care: The Intersection of Race, Ethnicity, Gender, and Socioeconomic Status. *Soc Ment Health*. 2018;8(1):1- 24. doi:10.1177/2156869317718889

[76] Prins MA, Verhaak PFM, Bensing JM, van der Meer K. Health beliefs and perceived need for mental health care of anxiety and depression--the patients' perspective explored. *Clin Psychol Rev*. 2008;28(6):1038-1058. doi:10.1016/j.cpr.2008.02.009

[77] Mojtabai R, Olfson M, Sampson NA, et al. Barriers to mental health treatment: results from the National Comorbidity Survey Replication. *Psychol Med*. 2011;41(8):1751-1761. doi:10.1017/S0033291710002291

[78] Andrade LH, Alonso J, Mneimneh Z, et al. Barriers to mental health treatment: results from the WHO World Mental Health surveys. *Psychol Med*. 2014;44(6):1303-1317. doi:10.1017/S0033291713001943

[79] Jorm AF. Mental health literacy. Public knowledge and beliefs about mental disorders. *Br J Psychiatry J Ment Sci*. 2000;177:396-401. doi:10.1192/bjp.177.5.396

[80] Schomerus G, Angermeyer MC. Stigma and its impact on help-seeking for mental disorders: what do we know? *Epidemiol Psichiatr Soc*. 2008;17(1):31-37. doi:10.1017/s1121189x00002669

[81] Daehn D, Rudolf S, Pawils S, Renneberg B. Perinatal mental health literacy: knowledge, attitudes, and help-seeking among perinatal women and the public – a systematic review. *BMC Pregnancy Childbirth*. 2022;22(1):574. doi:10.1186/s12884-022-04865-y

[82] Breslau J, Cefalu M, Wong EC, et al. Racial/ethnic differences in perception of need for mental health treatment in a US national sample. *Soc Psychiatry Psychiatr Epidemiol*. 2017;52(8):929-937. doi:10.1007/s00127-017-1400-2

[83] Iturralde E, Hsiao CA, Nkemere L, et al. Engagement in perinatal depression treatment: a qualitative study of barriers across and within racial/ethnic groups. *BMC Pregnancy Childbirth*. 2021;21(1):512. doi:10.1186/s12884-021-03969-1

[84] David P. Goldberg, Peter Huxley. *Mental Illness in the Community: The Pathway to Psychiatric Care*. Vol 3. Psychology Press; 2001.

[85] Sareen J, Jagdeo A, Cox BJ, et al. Perceived barriers to mental health service utilization in the United States, Ontario, and the Netherlands. *Psychiatr Serv Wash DC*. 2007;58(3):357-364. doi:10.1176/ps.2007.58.3.357

[86] Byatt N, Biebel K, Friedman L, Debordes-Jackson G, Ziedonis D, Pbert L. Patient's views on depression care in obstetric settings: how do they compare to the views of perinatal health care professionals? *Gen Hosp Psychiatry*. 2013;35(6):598-604. doi:10.1016/j.genhosppsych.2013.07.011

[87] Johnson EM, Possemato K. Defining the things we can change to improve access to mental health care. *Fam Syst Health J Collab Fam Healthc*. 2019;37(3):195-205. doi:10.1037/fsh0000435

[88] Webb R, Uddin N, Constantinou G, et al. Meta-review of the barriers and facilitators to women accessing perinatal mental healthcare. *BMJ Open*. 2023;13(7):e066703.

[89] Leis JA, Mendelson T, Perry DF, Tandon SD. Perceptions of Mental Health Services among Low- Income, Perinatal African-American Women. *Womens Health Issues*. 2011;21(4):314-319. doi:10.1016/j.whi.2011.03.005

[90] Cuijpers P, Franco P, Ciharova M, et al. Psychological treatment of perinatal depression: a meta- analysis. *Psychol Med*. 2023;53(6):2596-2608.

[91] Adzrago D, Walker TJ, Williams F. Reliability and validity of the Patient Health Questionnaire-4 scale and its subscales of depression and anxiety among US adults based on nativity. *BMC Psychiatry*. 2024;24(1):213.

[92] Kalibatseva Z, Leong FT. Depression among Asian Americans: review and recommendations. *Depress Res Treat*. 2011;2011(1):320902.

[93] Lee M, Bhimla A, Ma GX. Depressive symptom severity and immigration-related characteristics in asian American immigrants. *J Immigr Minor Health*. 2020;22:935-945.

[94] Roberts LR, Mann SK, Montgomery SB. Depression, a hidden mental health disparity in an Asian Indian immigrant community. *Int J Environ Res Public Health*. 2016;13(1):27.

[95] Nápoles AM, Stewart AL, Strassle PD, et al. Depression symptoms, perceived stress, and loneliness during the COVID-19 pandemic among diverse US racial-ethnic groups. *Health Equity*. 2023;7(1):364-376.

[96] McConville S. Access to Mental Health Providers Is Highly Uneven Across the State. Public Policy Institute of California. 2023. https://www.ppic.org/blog/access-to-mental-health-providers-is- highly-uneven-across-the-state/

[97] Liu CH, Erdei C, Mittal L. Risk factors for depression, anxiety, and PTSD symptoms in perinatal women during the COVID-19 Pandemic. *Psychiatry Res*. 2021;295:113552. doi:10.1016/j.psychres.2020.113552

[98] Panchal N, Saunders H, Rudowitz R, Cox C. The Implications of COVID-19 for Mental Health and Substance Use. Kaiser Family Foundation (KFF). March 20, 2023. Accessed June 22, 2023. https://www.kff.org/coronavirus-covid-19/issue-brief/the-implications-of-covid-19-for-mental- health-and-substance-use/

[99] Czeisler MÉ, Howard ME, Rajaratnam SMW. Mental Health During the COVID-19 Pandemic: Challenges, Populations at Risk, Implications, and Opportunities. *Am J Health Promot*. 2021;35(2):301-311. doi:10.1177/0890117120983982b

[100] Galea S, Merchant RM, Lurie N. The Mental Health Consequences of COVID-19 and Physical Distancing: The Need for Prevention and Early Intervention. *JAMA Intern Med*. 2020;180(6):817- 818. doi:10.1001/jamainternmed.2020.1562

[101] Centers for Disease Control and Prevention. *Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021*.; 2023.

[102] Duffy ME, Twenge JM, Joiner TE. Trends in Mood and Anxiety Symptoms and Suicide-Related Outcomes Among U.S. Undergraduates, 2007–2018: Evidence From Two National Surveys. *J Adolesc Health*. 2019;65(5):590-598. doi:10.1016/j.jadohealth.2019.04.033

[103] Johnson D, Dupuis G, Piche J, Clayborne Z,Colman I. Adult mental health outcomes of adolescent depression: A systematic review. *Depress Anxiety*. 2018;35(8):700-716.

[104] *Perinatal Mental Health Education and Screening Project: Phase I Final Report*. Maternal Mental Health Leadership Alliance; 2022. Accessed June 22, 2023. https://static1.squarespace.com/static/637b72cb2e3c555fa412eaf0/t/63ff6c10a47afd07e822073f /1677683735082/MMHLA+Final+Report+2-27-2023.pdf

[105] *Perinatal Mental Health Conditions Bundle*. Alliance for Innovationon Maternal Health; 2022. Accessed June 8, 2023. https://saferbirth.org/wp-content/uploads/R2_AIM_Bundle_PMHC.pdf

[106] Mojtabai R, Olfson M, Mechanic D. Perceived need and help-seeking in adults with mood, anxiety, or substance use disorders. *Arch Gen Psychiatry*. 2002;59(1):77-84. doi:10.1001/archpsyc.59.1.77

[107] Narendorf SC, Palmer A. Perception of Need and Receipt of Mental Health Treatment: A Three- Group Comparison of Young Adults With Psychological Distress. *Psychiatr Serv*. 2016;67(8):924- 927. doi:10.1176/appi.ps.201500230

[108] Sheikh S, Furnham A. A cross-cultural study of mental health beliefs and attitudes towards seeking professional help. *Soc Psychiatry Psychiatr Epidemiol*. 2000;35(7):326-334. doi:10.1007/s001270050246

[109] Committee on Obstetric Practice. The American College of Obstetricians and Gynecologists Committee opinion no. 630. Screening for perinatal depression. *Obstet Gynecol*. 2015;125(5):1268- 1271.

[110] Substance Abuse and Mental Health Services Administration. *Task Force on Maternal Mental Health's National Strategy to Improve Maternal Mental Health Care*; 2024. https://www.samhsa.gov/sites/default/files/mmh-strategy.pdf

[111] Hom MA, Stanley IH, Joiner Jr TE. Evaluating factors and interventions that influence help-seeking and mental health service utilization among suicidal individuals: A review of the literature. *Clin Psychol Rev*. 2015;40:28-39.

[112] Czyz EK, Horwitz AG, Eisenberg D, Kramer A, King CA. Self-reported barriers to professional help seeking among college students at elevated risk for suicide. *J Am Coll Health*. 2013;61(7):398-406.

[113] Matthews K, Morgan I, Davis K, Estriplet T, Perez S, Crear-Perry JA. Pathways To Equitable And Antiracist Maternal Mental Health Care: Insights From Black Women Stakeholders: Study examines pathways to equitable and antiracist maternal mental health care. *Health Aff (Millwood)*. 2021;40(10):1597-1604.

[114] Gassman-Pines A, Hill Z. How Social Safety Net Programs Affect Family Economic Well-Being, Family Functioning, and Children's Development. *Child Dev Perspect*. 2013;7(3):172-181. doi:10.1111/cdep.12037

[115] Shah H, Gennetian LA. Unconditional cash transfers for families with children in the U.S.: a scoping review. *Rev Econ Househ*. 2024;22(2):415-450. doi:10.1007/s11150-023-09672-8

[116] Collyer S, Curran MA, Garfinkel I, et al. The Child Tax Credit and Family Well-Being: An Overview of Reforms and Impacts. *Ann Am Acad Pol Soc Sci*. 2023;706(1):224-255. doi:10.1177/00027162231205148

[117] Massengale KEC, Erausquin JT, Old M. Health, Social, and Economic Outcomes Experienced by Families as a Result of Receiving Assistance from a Community-Based Diaper Bank. *Matern Child Health J*. 2017;21(10):1985-1994. doi:10.1007/s10995-017-2317-9

[118] Herba CM, Tremblay RE, Boivin M, et al. Maternal Depressive Symptoms and Children's Emotional Problems: Can Early Child Care Help Children of Depressed Mothers? *JAMA Psychiatry*. 2013;70(8):830-838. doi:10.1001/jamapsychiatry.2013.1361

[119] Yim IS, Tanner Stapleton LR, Guardino CM, Hahn-Holbrook J, Dunkel Schetter C. Biological and psychosocial predictors of postpartum depression: systematic review and call for integration. *Annu Rev Clin Psychol*. 2015;11:99-137. doi:10.1146/annurev-clinpsy-101414-020426

[120] Tabb KM, Bentley B, Pineros Leano M, et al. Home Visiting as an Equitable Intervention for Perinatal Depression: A Scoping Review. *Front Psychiatry*. 2022;13. Accessed June 22, 2023. https://www.frontiersin.org/articles/10.3389/fpsyt.2022.826673

[121] California Home Visiting Program. California Department of Public Health. Accessed July 14, 2025. https://www.cdph.ca.gov/Programs/CFH/DMCAH/CHVP

[122] *Black Infant Health Program Evaluation 2015-2018*. California Department of Public Health, Black Infant Health; 2021. Accessed June 23, 2023. https://www.cdph.ca.gov/Programs/CFH/DMCAH/BIH/CDPH%20Document%20Library/Data- Briefs/BIH_Data_Brief_Intermediate_Outcomes_2015-2018.pdf

[123] *Adolescent Family Life Program Evaluation: Program Outcomes July 1, 2017–June 30, 2020*. California Department of Public Health, Maternal, Child and Adolescent Health Division; 2023. https://www.cdph.ca.gov/Programs/CFH/DMCAH/AFLP/Pages/AFLP-Evaluation-Program- Outcomes.aspx

[124] *Screening and Diagnosis of Mental Health Conditions During Pregnancy and Postpartum*. American College of Obstetricians and Gynecologists; 2023. https://www.acog.org/clinical/clinical- guidance/clinical-practice-guideline/articles/2023/06/screening-and-diagnosis-of-mental-health- conditions-during-pregnancy-and-postpartum

[125] *AB-2193 Maternal Mental Health*; 2018. Accessed June 22, 2023. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB2193

[126] *AB-1936 Maternal Mental Health Screenings*; 2024. California Legislative Information. Accessed July 14, 2025. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB1936

[127] *2023 Maternal Mental Health Roadmap*. Policy Center for Maternal Mental Health; 2023. Accessed June 22, 2023. https://policycentermmh.org/app/uploads/2024/04/2023MaternalMentalHealthRoadmap-PolicyCenterforMaternalMentalHealth-R003-9.23.pdf

[128] *SB-1207 Health Care Coverage: Maternal and Pandemic-Related Mental Health Conditions*; 2022. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1207

[129] Kerker BD, Storfer-Isser A, Stein REK, et al. Identifying Maternal Depression in Pediatric Primary Care: Changes Over a Decade. *J Dev Behav Pediatr JDBP*. 2016;37(2):113-120. doi:10.1097/DBP.0000000000000255

[130] King L, Feeley N, Gold I, Hayton B, Zelkowitz P. The healthy migrant effect and predictors of perinatal depression. *Women Birth*. 2019;32(3):e341-e350.

[131] Chan AW, Reid C, Skeffington P, Marriott R. A systematic review of EPDS cultural suitability with Indigenous mothers: a global perspective. *Arch Womens Ment Health*. 2021;24:353-365.

[132] Shidhaye R, Bhide V, Bangal V, et al. Culturally sensitive translation of the Edinburgh Postnatal Depression Scale into Marathi language to assess perinatal depression in rural Maharashtra, India. *J Affect Disord Rep*. 2023;11:100458.

[133] Fellmeth G, Plugge E, Fazel M, et al. Validation of the Refugee Health Screener-15 for the assessment of perinatal depression among Karen and Burmese women on the Thai-Myanmar border. *PLoS One*. 2018;13(5):e0197403.

[134] *A Report from the California Task Force on the Status of Maternal Mental Health Care: A Strategic Plan*. California Task Force on Maternal Mental Health Care; 2017. https://www.issuelab.org/resources/41255/41255.pdf

[135] Janet Coffman, Timothy Bates, Igor Geyn, Joanne Spetz. California's Current and Future Behavioral Health Workforce. Healthforce Center at UCSF. Accessed June 23, 2023. https://healthforce.ucsf.edu/publications/california-s-current-and-future-behavioral-health- workforce

[136] *Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission*. California Future Health Workforce Commission; 2019.

[137] Patricia E. Powers. Progress Since the California Future Health Workforce Commission: State Policy and Budget Actions on Priority Recommendations. January 2022.

[138] Governor Newsom Signs Bills to Expand Access to Quality Behavioral Health Care for all Californians & Help Homeless Californians Suffering Extreme Mental Illness on Our Streets & Sidewalks. Office of Governor Gavin Newsom. September 25, 2020. Accessed June 8, 2023. https://www.gov.ca.gov/2020/09/25/governor-newsom-signs-bills-to-expand-access-to-quality- behavioral-health-care-for-all-californians-help-homeless-californians-suffering-extreme-mental- illness-on-our-streets-sidewalks/

[139] *Mental Health Care: Access Challenges for Covered Consumers and Relevant Federal Efforts*. United States Government Accountability Office; 2022. https://www.gao.gov/assets/gao-22-104597.pdf

[140] Rahim, Hannah. Addressing Ghost Networks in Mental Health Care. Bill of Health, Petrie-Flom Center at Harvard Law School. December 6, 2023. https://blog.petrieflom.law.harvard.edu/2023/12/06/addressing-ghost-networks-in-mental- health-care/

[141] Medi-Cal News Flash: Postpartum Care Expansion for Medi-Cal and MCAP Beneficiaries. California Department of Health Care Services. January 8, 2022. Accessed June 22, 2023. https://files.medi-cal.ca.gov/pubsdoco/newsroom/newsroom_31351.aspx

[142] Kathryn Margolis. New Children's Medi-Cal Behavioral Health Benefits 101: Family....First 5 Center for Children's Policy. Accessed June 15, 2023. https://first5center.org/blog/new-childrens-medi- cal-behavioral-health-benefits-101-family-therapy-and-dyadic-services

[143] Bush S, Byatt N, Simas TM. Addressing Perinatal Mental Health Conditions In Obstetric Settings| ACOG eModule. ACOG Online Learning. Accessed June 15, 2023. https://www.pathlms.com/acogwebinars/courses/49949

[144] Postpartum Support International. Medical Provider Trainings. https://www.postpartum.net/professionals/frontline-provider-trainings/

[145] Stentzel U, Grabe HJ, Schmidt S, Tomczyk S, van den Berg N, Beyer A. Mental health-related telemedicine interventions for pregnant women and new mothers: a systematic literature review. *BMC Psychiatry*. 2023;23(1):292. doi:10.1186/s12888-023-04790-0

[146] Lo J, Matthew Rae, Krutika Amin, Cynthia Cox, Panchal N, Miller BF. Telehealth Has Played an Outsized Role Meeting Mental Health Needs During the COVID-19 Pandemic. Kaiser Family Foundation (KFF). March 15, 2022. Accessed June 15, 2023. https://www.kff.org/coronavirus- covid-19/issue-brief/telehealth-has-played-an-outsized-role-meeting-mental-health-needs-during- the-covid-19-pandemic/

[147] *Peers Supporting Recovery from Mental Health Conditions*. Substance Abuse and Mental Health Services Administration (SAMHSA); 2017. Accessed June 8, 2023. https://www.samhsa.gov/sites/default/files/programs_campaigns/brss_tacs/peers-supporting- recovery-mental-health-conditions-2017.pdf

[148] *A Significant Solution for Maternal Mental Health: Certified Peer Specialists*. Policy Center for Maternal Mental Health; 2023. doi:10.15868/socialsector.40014

[149] Miyamoto Y, Sono T. Lessons from Peer Support Among Individuals with Mental Health Difficulties: A Review of the Literature. *Clin Pract Epidemiol Ment Health*. 2012;8(1). doi:10.2174/1745017901208010022

[150] California Department of Health Care Services. Medi-Cal Peer Support Services. https://www.dhcs.ca.gov/services/Pages/Peer-Support-Services.aspx

Technical Appendix

Data Source

The data source for this report is the *California Maternal and Infant Health Assessment (MIHA).* MIHA is an annual survey of people giving birth in California, sampled from birth certificates. The survey asks about pre-pregnancy health status and health conditions, mental health, experience of and worry about racial discrimination, health insurance coverage, food insecurity, stressful events during pregnancy, breastfeeding, and additional items. Survey data are linked to birth certificates and weighted to be representative of California births each year.

Definitions of indicators

Indicators included in this report are defined in this section. The denominator for data from MIHA is all California residents with a live birth in the years presented.

Mental health measures

- **Depression symptoms**: Always or often felt down, depressed, or hopeless, or had little interest or little pleasure in doing things the birthing person usually enjoyed, during or after pregnancy.
- **Anxiety symptoms:** Always or often felt nervous, anxious, or on edge, or were unable to stop or control worrying, during or after pregnancy.
- **History of depression:** Prior to pregnancy, were told by a health care provider that they had depression.
- **Perceived need for mental health care:** During or after pregnancy, felt they needed help for emotional well-being or mental health concerns, such as feeling anxious, irritable, restless, down, depressed, or hopeless.
- **Receipt of mental health treatment**: When they felt they needed help, ever saw a doctor or mental health professional for emotional or mental health counseling or treatment.
- **Barriers to mental health treatment:** Among those who perceived a need to mental health care but did not receive it, indicated the following reasons for not getting counseling or treatment: unsure where to go for treatment or what was best for them; it cost too much or their insurance did not cover it; couldn't find a provider who would see them; too busy; had problems with transportation or childcare; worried they might have to take medication; uncomfortable talking about concerns with anyone; worried what would happen if someone found out they had mental health concerns; got help from a religious or spiritual leader or traditional healer; didn't think they needed help at the time or thought they could handle their concerns on their own; or other.

- **Screening for mental health conditions:** During pregnancy or after pregnancy, filled out a form or was asked a series of questions from a doctor, nurse, social worker, or other professional about feeling down, depressed, anxious, or irritable.

Population and maternal characteristics

- **Race and ethnicity:** Race and ethnicity definitions for this report are as follows: Hispanic includes all birthing people who reported Hispanic origin, of any race. All birthing people who did not report Hispanic origin are defined according to their reported race(s): American Indian/Alaska Native, Asian, Black, Pacific Islander, or White.
- **Maternal birthplace:** Birthplace is based on report of birth in the United States (including 50 states, Washington, D.C., and US jurisdictions) or in another country.
- **Age:** Age of birthing person at time of the birth.
- **Health insurance:** During pregnancy, the birthing person had Medi-Cal or a health plan paid for by Medi-Cal; private insurance through their job or their spouse's/partner's job, their parents, or purchased directly; had another form of insurance, such as military coverage or a county plan; or was uninsured. People with both Medi-Cal and private insurance are categorized as Medi-Cal.
- **Income as a percentage of the Federal Poverty Guideline:** Calculated from annual family income before taxes from all sources, including jobs, welfare, disability, unemployment, child support, interest, dividends, and support from family members, and the number of people living on that income. See the annual Poverty Guidelines published by the U.S. Department of Health and Human Services for more detail: https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines

Stressors

- **Intimate partner violence during pregnancy:** During pregnancy, experienced any of the following: pushed, hit, slapped, kicked, choked, or physically hurt in any way by current or former partner; frightened for safety of self, family, or friends because of current or former partner's anger/threats; current or former partner tried to control most/all daily activities; current or former partner forced them into unwanted sexual activity.
- **Respondent or partner incarcerated:** Respondent or partner went to jail during pregnancy.
- **Someone close with a substance use problem:** During pregnancy, someone very close to the respondent had a bad problem with drinking or drugs.

- **Had to move due to rent or mortgage:** Respondent had to move during pregnancy because of problems paying the rent or mortgage.
- **Unhoused or housing insecure:** During pregnancy, had no regular place to sleep at night or was homeless.
- **Separation or divorce:** Respondent became separated or divorced from partner during pregnancy.
- **Had a lot of bills that were hard to pay:** Respondent had a lot of bills that they could not pay during pregnancy.
- **Food insecurity:** Calculated from an adapted two-item screener for food insecurity: during pregnancy, worried food would run out before they had money to get more or food they bought didn't last and they didn't have money to get more.
- **Respondent or partner lost their job:** During pregnancy, respondent lost job even though wanted to go on working or partner lost their job.
- **Respondent or partner had pay or hours cut:** Respondent or partner had pay or hours cut back during pregnancy.
- **Worried about or experienced racism:** somewhat often or very often worried about being treated unfairly due to race, or experienced unfair treatment due to race, over their lifetime.

Data analysis

Percentages and rates presented in this report describe the prevalence of mental health outcomes, screening, and barriers to care among those who perceived a need for care. The 95% confidence interval presented in tables indicates that there is a 95% chance that the range contains the true prevalence or rate in the population. The annual population estimates presented in this report are averages calculated by dividing the total number of events (e.g., number of individuals with depression symptoms) by the number of years pooled to create that total, which for most measures in this report was two years, 2020-2021.

All associations described in this report are statistically significant ($p<.05$) based on prevalence ratios from multivariable logistic regression models, non-overlapping confidence intervals from crosstabs, or chi-square tests. Bivariate comparisons between subcategories of a population were made by examining the 95% confidence intervals of the two estimates when chi-square tests indicated a significant association.

Data from each of the data sources were analyzed using SAS software. The MIHA survey sampling and weighting procedures are described in detail in the MIHA technical notes available on the MIHA website (www.cdph.ca.gov/MIHA).

Annotation and suppression

Indicators from the MIHA survey are suppressed when the following occur:

1. the sample numerator is less than 5,
2. the number of women in the population of interest (population denominator) is less than 100, or
3. the relative standard error (RSE) is greater than 50%. Additionally, estimates are annotated and users are warned to interpret with caution if the RSE is between 30% and 50%. The RSE is a commonly used measure of reliability, or precision, of survey estimates and is calculated using the following formulas:
    a. For estimates with a prevalence <= 50%: *Standard error / estimate*
    b. For estimates with a prevalence >50%: *Standard error / (1 – estimate)*