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Pregnancy termination and potential psychiatric outcomes

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INTRODUCTION

In the United States in 2017, approximately 850,000 pregnancies were terminated [1]. This represented a decline of 7 percent from 2014 and was the lowest recorded rate since abortion was legalized in 1973. Birthrates have also declined in almost all states from 2017 to 2014, indicating that fewer people became pregnant, not that more individuals chose (or were required) to give birth over having an abortion. Approximately half of all pregnancies were unintended and 40 percent of these were terminated [2]. The number of intended pregnancies that were terminated has increased due to advances in prenatal testing for fetal abnormalities [3-5].

Although the psychiatric impact of pregnancy termination has been controversial, most studies, especially higher-quality ones, suggest that induced abortion is not associated with an increased risk of serious mental health disorders [6-14]. The psychological effect of pregnancy termination varies depending upon whether the reason is an unwanted pregnancy, multiple gestation, or fetal anomalies.

The potential psychiatric outcomes of pregnancy termination are reviewed here. Other issues regarding pregnancy termination are discussed separately. (See "[Overview of pregnancy termination](#)".)

EVIDENCE REGARDING POTENTIAL OUTCOMES

Most reviews, including a description of the Turnaway Study [15], have concluded that abortion does not harm a women's mental health [6,7,16-20]. The Turnaway Study is the largest and longest study of the psychosocial effects of abortion versus childbirth.

However, some of the evidence regarding the psychiatric effects of pregnancy termination is of low quality, and study designs are inconsistent [16]. Many studies do not use validated mental health measures or control for pre-abortion mental status and whether the pregnancy is planned, and the presence and type of comparison group varies [6]. Specifically, many studies compare women with unplanned pregnancies to women planning an ongoing pregnancy. The circumstance of an unwanted pregnancy involves factors that are likely to be associated with emotional distress, such as impaired relationships and financial difficulties.

In addition, psychological responses to pregnancy termination often vary by social, cultural, religious, or legal context, so generalizations across populations are difficult to make [21,22]. Emotional responses to abortion are expected to differ between environments where induced abortion is permissible and where abortion is disapproved. If abortion poses risks such as injury, financial ruin, or incarceration, it is difficult to distinguish psychological responses to abortion from fears of the consequences. However, the Turnaway Study [15] and development of new assessment tools [14] have addressed some of these confounders.

The following sections focus upon mental health outcomes following pregnancy termination for unintended pregnancy. Psychiatric outcomes of pregnancy termination due to fetal abnormalities are discussed in a separate section. (See '[Termination for fetal anomalies](#)' below.)

This topic reviews the best evidence rather than all of the evidence, consistent with all UpToDate topics. Thus, prospective observational studies are favored over retrospective studies, studies with appropriate control groups are favored over those with inappropriate or no control groups, studies with more events of interest are favored over those with fewer outcomes, studies of longer duration are favored over shorter studies, and studies that adjust for potential confounders (eg, prepregnancy mental disorders) are favored over studies that did not.

Mental disorders in aggregate — Most studies, especially higher-quality studies, suggest that induced abortion is not associated with an increased risk of mental health disorders [6-9]. As an example, the primary findings in a systematic review of 44 studies included the following [16]:

- Among women with unwanted pregnancies who either terminate the pregnancy or give birth, the rate of mental illness is comparable.

- Unwanted pregnancies are associated with an increased risk for mental illness.
- Postabortion mental illness is most consistently associated with pre-abortion mental illness. Other factors that may contribute to mental health problems following pregnancy termination include negative attitudes towards abortion, pressure from a partner to have an abortion, and negative reactions to the abortion including grief or doubt.

A subsequent retrospective study included adolescents who either had an induced abortion (n = 1041) or gave birth (n = 394) and were then followed up to age 25 years [12]. Following the abortion or childbirth, the risk of subsequent psychiatric disorders or episodes of self-harm were comparable.

Some data suggest that the patient population who undergo abortion have a higher baseline rate of mental health disorders. As an example, national registry study identified females who had no mental disorder and who either had a first-time first-trimester induced abortion or first childbirth [23]. The study estimated the rates of first psychiatric contact (either inpatient admission or outpatient visit) for the 12-month period after the abortion or delivery as compared with the nine-month period preceding the event. The primary findings included the following:

- Among women who had an abortion (n >84,000), the incidence of first psychiatric contact for the 12 months after and the nine months preceding the abortion was comparable.
- The incidence of psychiatric contact among women (n >280,000) was greater after childbirth than before.
- The incidence of mental health problems was greater in the nine months preceding abortion than the nine months preceding childbirth.

A subsequent national registry study identified women who had been hospitalized for mental disorders (eg, unipolar major depression, schizophrenia, substance use disorder, or personality disorder) and subsequently became pregnant [24]. Among the women who had a first-time first-trimester induced abortion (n >2800), the risk of readmission during the 12 months after the abortion or during the nine months prior to the abortion was comparable (relative risk 1.1, 95% CI 0.8-1.34). By contrast, in the women who delivered their first child (n >5200), the risk of readmission was greater during the 12 months after delivery than the nine months prior to delivery (relative risk 1.8, 95% CI 1.3-2.4).

Women frequently struggle with decisions to end pregnancies. However, the conflicts and ambivalence regarding the abortion decision typically occur before the abortion [25]. While

unintended pregnancy brings about a crisis and stress for many women, the pregnancy termination is usually perceived as a resolution of the crisis and brings a sense of relief [26,27].

Although a meta-analysis of 22 observational studies (n >870,000 subjects, including more than 160,000 who had an abortion) found an 81 percent increased risk of mental health problems (eg, depression, anxiety, and/or substance use disorders) among women who had a prior abortion [17], this analysis has been widely criticized because of several methodologic problems [6,7,18,28]. As an example, half of the studies included in the meta-analysis were conducted by the same investigator who performed the meta-analysis, which raised concerns about selection bias; in addition, the meta-analysis did not assess the quality of studies that were included and did not control for mental illness prior to the induced abortion.

Suicide — The best evidence suggests that induced abortion does not increase the risk of suicidal ideation or behavior [29]:

- In a systematic review that assessed study quality, no high- or fair-quality studies found an increased risk of completed suicide associated with pregnancy termination [8]. However, two poor-quality studies found an association between pregnancy termination and completed suicide. In addition, a study not included in the review also found an association between termination of pregnancy and deliberate self-harm (suicide attempt), but the investigators concluded that the finding was probably confounded by factors such as psychological and social difficulties [30].
- A subsequent, five-year prospective study (Turnaway Study) followed 956 women who presented to a clinic seeking an abortion and either received an abortion or were denied an abortion (turned away) because they presented after the facility's gestational limit [31]; additional study details are described elsewhere in this topic (see '[Depression](#)' below). The study showed that after the women first presented to the clinic seeking an abortion, the prevalence of suicidal ideation was similarly low in women who had abortions and women who did not, throughout follow-up. As an example, suicidal ideation in the near-limit abortion group and in the turnaway birth group (see '[Depression](#)' below) was as follows:
 - One week – 1.9 and 1.3 percent
 - One year – 1.3 and 0.9 percent
 - Two years – 0.9 and 0.6 percent
 - Three years – 0.6 and 0.5 percent
 - Four years – 0.4 and 0.3 percent
 - Five years – 0.3 and 0.2 percent

Factors at baseline that were associated with increased suicidal ideation included history of intimate partner violence in the past year, lifetime history of sexual assault, lifetime diagnosis of depression or anxiety, and prepregnancy alcohol abuse. Additional information about the association between violence victimization and postabortion mental health is discussed elsewhere in this topic. (See '[Violence victimization](#)' below.)

- A national registry study included nearly 49,000 women with a first-lifetime abortion [13]. After adjusting for potential confounding factors such as personal and family psychiatric history and general medical comorbidity, the analyses found that the risk of a first, nonfatal suicide attempt was nearly identical in the year before the abortion and the year after. In addition, as time elapsed following the abortion, the risk of a suicide attempt decreased.

Increased enforcement of laws restricting access to abortion may also increase the risk of suicide. (See "[Unsafe abortion](#)", section on '[Other health consequences of abortion restriction](#)'.)

Psychosis — Induced abortion does not appear to be associated with an increased risk of psychosis; however, few studies have examined this issue. One prospective observational study found that among women with an unplanned pregnancy and no history of mental illness, the risk of psychosis was 70 percent lower in women who terminated their pregnancies than in women who delivered them [30]. However, the incidence of psychosis leading to hospitalization appeared to be comparable for the two groups.

Depression — Although there are conflicting data regarding the association of pregnancy termination with the long-term risk of depressive syndromes, higher-quality studies (eg, prospective and well-controlled) have generally found that induced abortion is not associated with an increased risk of depressive syndromes [16]. As an example [29,32]:

- A five-year prospective study (Turnaway Study) followed [10,33]:
 - Women who received a first-trimester abortion (n = 273)
 - Women who received an abortion near the facility's gestational limit (n = 452)
 - Women who were denied an abortion because they presented after the facility's gestational limit and subsequently
 - Gave birth (n = 161)
 - Did not give birth because they miscarried or had an abortion at another clinic (n = 70)

Data were gathered through patient self-reports by telephone, and the analyses controlled for potential confounding factors (eg, age, parity, marital status, and psychiatric history). The study found that at baseline (assessed eight days after the first visit to the abortion clinic), self-reported rates of clinical depression were comparable for the four groups, as were cumulative rates over three years (ranging from 9 to 14 percent among the groups). Follow-up assessments for an additional two years showed that five years after seeking an abortion, the level of depressive symptoms for the four groups was similar. However, attrition at five years exceeded 40 percent.

- In a prospective study, women were followed from birth and assessed at age 21 years; the cohort included women with a recent or remote history of either an induced abortion (n = 101) or miscarriage (n = 82) [34]. Analyses that adjusted for early life and family factors, adolescent behaviors, and sociodemographic factors showed that the lifetime risk for mood disorders (unipolar major depression, persistent depressive disorder, and bipolar disorder) was comparable for the two groups.
- A retrospective study examined women in a nationally representative sample aged 14 to 21 years in 1979, who had unplanned first pregnancies and either had an induced abortion (n = 479) or carried the pregnancy to term (n = 768) [35]. The incidence of depression following abortion or delivery was comparable (25 and 29 percent). In addition, an analysis of a subgroup who had an abortion (n = 225) or delivery (n = 310) before 1980 found that depression occurred in fewer women who terminated the pregnancy than delivered (26 versus 35). Although a prior study using the same dataset found that the risk of depression was greater among women who had abortions than women who delivered [36], multiple reviews have concluded that this study was of poor quality because of several methodologic flaws such as selection bias [8,9].

Following the diagnosis of pregnancy and prior to termination, depression occurs in approximately 20 percent of women [37]. Following induced abortion, the prevalence of depression is also approximately 20 percent [16].

Anxiety — Although many women experience anxiety just prior to pregnancy termination, the short-term risk of anxiety symptoms appears to be greater in women who are denied an abortion compared with women who have an abortion [33]. In addition, the long-term risk of anxiety disorders after an abortion is not elevated [16,29,38]:

- A review of 24 studies found that in good-quality studies, significant levels of anxiety prior to abortion occurred in 40 to 45 percent of women [37]. Most studies found that in the month following pregnancy termination, the prevalence of anxiety had decreased. In one

study, the factor most commonly associated with pre-abortion anxiety was anticipation of pain [39].

- A five-year prospective study (Turnaway Study) followed 956 women who presented to a clinic seeking an abortion and either received an abortion or were denied an abortion (turned away) because they presented after the facility's gestational limit [10,33]; additional study details are described elsewhere in this topic (see 'Depression' above). The primary findings regarding anxiety included the following:
 - Eight days after the initial visit to seek an abortion, the rate of clinical anxiety was greater in the turn-away no-birth group, compared with the near-limit group (odds ratio 4.4, 95% CI 1.2-16.3).
 - Subsequently, rates of clinical anxiety in the groups progressively converged, and three years after seeking an abortion, the cumulative rate of clinical anxiety was comparable for the four groups (ranging from 10 to 16 percent among the groups).
 - Five years after the initial visit to an abortion clinic, the level of anxiety symptoms for the four groups was similar. However, attrition at five years exceeded 40 percent.
- A retrospective study of women with an unintended first pregnancy who had an induced abortion (n = 1167) or carried the pregnancy to term (n = 2315), analyses that controlled for potential confounders (including prepregnancy anxiety and rape) showed that the rate of postpregnancy anxiety symptoms lasting at least six months was comparable [38].

Posttraumatic stress disorder — Pregnancy termination does not appear to be associated with posttraumatic stress disorder (PTSD) [38]. As an example:

- A prospective study of women who requested an induced abortion for a first-trimester pregnancy (n = 1402) included assessments at baseline after diagnosis of the pregnancy and prior to the abortion, and again six months after the abortion [40]. The prevalence of current PTSD at baseline and six months later was 4 and 2 percent. In addition, the majority of women who did not have PTSD at baseline but developed it after the abortion did so because of traumatic experiences unrelated to the abortion.
- Another prospective study included women who had an induced abortion of a first-trimester unintended pregnancy and were assessed two years later (n = 442) [41]. The incidence of PTSD was 1 percent, which was lower than the rate of PTSD in the general population.

- The prospective Turnaway Study screened three groups of women for PTSD at baseline (assessed eight days after their visit to an abortion clinic) and then every six months over four years [11]. The three groups included women who:
 - Received a first-trimester abortion (n = 252)
 - Received an abortion near the facility's gestational limit (n = 404)
 - Were denied an abortion and gave birth because they presented after the facility's gestational limit (n = 157)

After controlling for potential confounding factors (eg, age, marital status, and history of child abuse, sexual assault, and/or psychiatric disorders), the analyses found that the baseline risk of screening positive for PTSD was comparable for the three groups, as was the risk during follow-up.

Although some studies have found an elevated risk of PTSD after pregnancy termination [42,43], it appears that there are methodologic flaws in these studies, and thus it is not possible to know if the association is due to confounding factors that are frequently present in women who suffer PTSD and women who terminate their pregnancy [44-47]. Potential confounders include a history of having been a victim of violence and a prior history of mental disorders.

Substance abuse — Prospective studies suggest that induced abortion is not associated with an increased risk of subsequent substance use disorders:

- In one study, women were followed from birth and assessed periodically, through age 21 years; the cohort included women with a history of an induced abortion (n = 101) or miscarriage (n = 82) [34]. Analyses that adjusted for early life and family factors, adolescent behaviors, and sociodemographic factors showed that the lifetime risk for alcohol use disorder, cannabis use disorder, or other illicit substance use disorder (eg, amphetamines, cocaine, or opioids) was comparable for the two groups.
- A two-year prospective study included women with unwanted pregnancies who had a first-trimester abortion (n = 273), a second-trimester abortion (n = 452), or who delivered because they were denied an abortion (they presented just beyond the gestational duration limit; n = 161) [46]. Illicit drug use (eg, cannabis, cocaine, or prescription drug misuse) was comparable for the three groups (11, 9, and 10 percent).

Eating disorders — Termination of pregnancy does not appear to increase the risk of eating disorders; however, few studies have examined this issue. One retrospective study examined women in a nationally representative sample who had their first induced abortion (n = 259) or childbirth (n = 677), and were assessed for the presence of anorexia nervosa, bulimia nervosa,

or binge eating disorder [29]. After adjusting for prepregnancy mental disorders, the probability of suffering a postpregnancy eating disorder was comparable for the two groups.

In addition, it appears that women with an eating disorder who become pregnant are more likely to have an unplanned pregnancy than women without an eating disorder. As an example, a prospective observational study identified women with anorexia nervosa ($n = 62$) who became pregnant and women with no eating disorder who became pregnant ($n = 61,998$) [47].

Unplanned pregnancies were more frequent in women with anorexia nervosa than women with no eating disorder (50 versus 19 percent).

Regret — Following a pregnancy termination, short- and long-term emotions are often mixed and may include regret; however, the predominant feeling is relief [48,49].

Studies of regret in women who have induced abortions do not always clarify the question, “If you could go back in time with what you know now, would you make a different decision?” This question about decisional regret is often conflated with situational regret [50]; many women regret their situation, in which they have to cope with an undesired pregnancy. When the types of regret are analyzed in detail, few women report true decisional regret [51], and when they do, often have simultaneous feelings of relief.

Evidence regarding pregnancy termination and short-term decisional regret includes a prospective study (the Turnaway Study), which examined the consequences of receiving or being denied an abortion. The women who received an abortion ($n = 665$) were asked one week later if the decision to have an abortion was the right one, given the situation; 95 percent replied yes [52]. In the subset of women who received an abortion just prior to the clinic’s gestational limit ($n = 411$), 41 percent felt regret, but among those feeling regret, 87 percent also felt relief. In addition, women who were turned away because they exceeded the gestational duration limit at that clinic ($n = 178$) were more likely to experience regret (regarding their ongoing pregnancy) than women who were still eligible and received an abortion. Other studies have also found that the predominant short-term emotion after abortion is relief [41,53,54].

The prospective Turnaway Study also examined longer-term regret associated with pregnancy termination. Women in the study who terminated their pregnancy ($n = 667$) were assessed every six months for three years; at each follow-up interview, approximately 95 percent thought it was the right decision. Regret and other negative emotions (anger, guilt, and sadness) were uncommon and were more likely to be reported by women who had terminated planned pregnancies; the intensity of these negative emotions diminished over time. Continued evaluations of the women for a total of five years found that the most common emotion at each

assessment was relief [48,49]. In addition, a comparison of the women who received an abortion with women who were denied an abortion (n = 161) found few differences in decision regret [15].

Self-esteem — Self-esteem in the short term appears to be lower in women who are denied an abortion, compared with women who receive an abortion. A five-year prospective study (Turnaway Study) followed 956 women who presented to a clinic seeking an abortion and either received an abortion or were denied an abortion (turned away) because they presented after the facility's gestational limit [10,33]; additional study details are described elsewhere in this topic (see '[Depression](#)' above). Eight days after the initial visit to seek an abortion, self-esteem was lower in the turn-away group compared with women who received an abortion near the facility's gestational limit; the difference was small to moderate. Within one year of seeking an abortion, self-esteem was comparable for women who received an abortion or were denied an abortion; this finding persisted for another four years. However, attrition at five years exceeded 40 percent.

Life satisfaction — Life satisfaction in the short term appears to be worse in women who are denied an abortion, compared with women who receive an abortion. A five-year prospective study (Turnaway Study) followed 956 women who presented to a clinic seeking an abortion, and either received an abortion or were denied an abortion (turned away) because they presented after the facility's gestational limit [10,33]; additional study details are described elsewhere in this topic (see '[Depression](#)' above). Eight days after the initial visit to seek an abortion, life satisfaction was worse in the group of women who were denied an abortion but did not give birth (because they miscarried or had an abortion at another clinic) compared with women who received an abortion near the limit of the facility's gestational limit; the difference was small to moderate. Within one year of seeking an abortion, life satisfaction was comparable for women who received an abortion or were denied an abortion; this finding persisted for another four years. However, attrition at five years exceeded 40 percent.

Stigma — Concern about social stigma is a common psychological aspect of pregnancy termination [52,55,56], and fear of stigma can lead women to make decisions that increase the physical and mental risks of abortion [56]. In a study of women followed prospectively for two years after pregnancy termination (n = 442), 47 percent reported that others would disapprove of them as a result of their abortion and 44 percent felt they needed to keep the abortion a secret from family and/or friends [57].

In addition, difficulties in obtaining an abortion may exacerbate perceived stigma. In a prospective study of 928 women seeking abortion, women who were denied an abortion (based upon clinic-specific gestational age limits), and later experienced a miscarriage or obtained an

abortion at another facility, had the highest rates of perceived social stigma, compared with women who had an abortion at earlier gestational ages or were denied an abortion and continued the pregnancy [58]. The women who were denied an abortion and subsequently miscarried or received an abortion elsewhere experienced the stigma associated with abortion denial, as well as the stigma associated with miscarriage or abortion.

Stigma may contribute to the internalization of negative perceptions of self, as well as negatively influence patient perception of the abortion experience [57,59]. A three-year prospective study of women who terminated a pregnancy (n = 667) found that women who perceived greater community stigma about abortion reported more negative emotions (regret, guilt, sadness, and/or anger) following an abortion [48].

POTENTIAL MODIFYING FACTORS

The following factors appear to be associated with the degree of emotional distress that occurs in response to pregnancy termination:

- Mental disorders prior to abortion
- Social support
- Relationship violence
- Attitude toward pregnancy termination
- Current family size
- Termination for a fetal anomaly

By contrast, the following factors do not appear to be related to emotional distress following pregnancy termination:

- Gestational duration
- History of pregnancy termination
- Pregnancy termination technique
- Socioeconomic status
- Adolescence
- Multifetal pregnancy reduction

Factors that may increase risk of postabortion psychiatric problems

Mental disorders prior to abortion — Mental health prior to pregnancy termination is the most important risk factor for psychiatric symptoms or diagnoses after induced abortions [7,16,31,45,60]. Studies that account for prepregnancy mental disorders generally find that

induced abortion is not associated with postpregnancy mental disorders [29,32]. Conversely, several studies that have found an association between induced pregnancy and mental disorders did not account for prepregnancy mental disorders [17,61].

Among pregnant women who either have an induced abortion or carry the pregnancy to term, the rate of mental disorders preceding induced abortion appears to be greater than the rate preceding delivery [23]. A nationally representative survey identified women who had their first induced abortion (n = 259) or first childbirth (n = 677), and assessed the presence of mental disorders (eg, anxiety disorder, mood disorder, or substance use disorder) prior to pregnancy [29]. Prepregnancy mental disorders were more common in the abortion group than the birth group (62 versus 42 percent).

Social support — The psychological support available to women before and after pregnancy termination affects their perception, experience, and postpregnancy feelings about abortion. Studies have found that low perceived or anticipated social support is associated with an increased rate of negative emotion following pregnancy termination [7,16]. In addition, relationship health, rather than marital status, appears to affect emotional response to abortion; most studies have found that partner support is a key factor in reducing the risk of emotional distress [16,62,63]. Conversely, women who report pressure from a partner or friends as the reason for terminating the pregnancy may be more likely to feel distress, such as symptoms of posttraumatic stress disorder (PTSD) [42,64].

Emotional support may be provided by the woman's partner or other family, friends, or clinicians or counselors [51]. (See "[Counseling in abortion care](#)".)

Violence victimization — A current or past history of having been a victim of violence (eg, childhood physical and sexual abuse, partner violence, rape, or being threatened with a weapon) is associated with pregnancy termination as well as mental disorders [31]:

- A prospective study of women (n >9000) found that the effect of intimate partner violence upon the incidence of depressive symptoms was fourfold greater than the effect of pregnancy termination or giving birth [65].
- A retrospective study that examined women in a nationally representative sample found that in analyses that controlled for prepregnancy violence, abortion was not related to depression [32]. In addition, the study found that prepregnancy rape or molestation predicted postpregnancy depression and suicidal ideation and behavior.
- In another retrospective study of women (n >2000), analyses that controlled for history of violence and sociodemographic factors found that abortion was not correlated with

depression, anxiety, or suicidal thoughts [66].

In addition, a history of intimate partner violence, rape, and/or sexual abuse is more common among women who undergo multiple induced abortions, compared with women who undergo one abortion [67].

Identifying, supporting, and referring women experiencing relationship violence can be an effective intervention against further psychological consequences of that violence [68].

Termination counseling provides an opportune time to intervene. (See "[Intimate partner violence: Diagnosis and screening](#)" and "[Intimate partner violence: Intervention and patient management](#)".)

Attitude toward pregnancy termination — Baseline ambivalence and negative attitudes toward abortion may be associated with negative emotional responses postabortion. In a retrospective study, adverse attitudes about abortion prior to the procedure were present in more women who suffered postabortion emotional distress (n = 74) than women who did not (n = 72; 46 versus 10 percent) [62].

A woman may feel compelled to terminate an unintended pregnancy, despite a negative personal attitude toward pregnancy termination; this may make it difficult for her to accept her decision without anxiety and distress. In addition, attitudes about abortion may be influenced by religious or legal factors [69].

Current family size — Women with greater numbers of children appear to have more positive attitudes towards abortion [70] and better psychological responses two years postprocedure than women with fewer or no children [64].

Termination for fetal anomalies — Advances in techniques for prenatal testing now enable clinicians to diagnose many fetal abnormalities during pregnancy. Women and their partners who receive a diagnosis of a fetal abnormality must make a challenging decision regarding pregnancy termination or continuing the pregnancy. In addition, women with a multiple gestation may undergo selective termination if one fetus has an abnormality. (See "[Multifetal pregnancy reduction and selective termination](#)", section on 'Selective termination'.)

Studies have found that women who terminate a pregnancy because of a fetal abnormality are likely to experience significant emotional distress. The level of distress is generally comparable to that for women who have pregnancy loss (miscarriage, stillbirth, or neonatal death) during the second trimester or later [71]. In one study of women who terminated their pregnancy because of fetal anomalies (n = 147), assessments conducted four months after termination found that clinically significant symptoms of PTSD or depression occurred in 46 and 28 percent

[72]. At the 16-month follow-up, symptoms of posttraumatic stress or depression were present in 21 and 13 percent.

Prenatal diagnostic testing is available for some conditions during the first trimester, but most fetal abnormalities are diagnosed in the second trimester. One study found that women who underwent pregnancy termination for a fetal anomaly in the second trimester were more likely to have posttraumatic stress symptoms than those who had a first-trimester termination [4].

Counseling women who consider termination after diagnosis of fetal anomalies or threat to maternal health demands special considerations. In such cases, the pregnancy termination typically occurs among women who initially desired their pregnancies and have not contemplated the need to terminate them. Both factors make the decision more painful. Helping these women grieve and making referrals to support organizations or psychotherapists may be helpful.

Factors that do not appear to be related to postabortion mental health

Gestational duration — There are limited data about the impact of gestational duration on mental health outcomes of pregnancy termination:

- A two-year prospective study included women with unwanted pregnancies who had a first-trimester abortion (n = 273), a second-trimester abortion (n = 452), or were denied an abortion because they presented just beyond the gestational limit (n = 161) [46]. Drug use (eg, cannabis, cocaine, or prescription drug misuse) was comparable for the three groups.
- A systematic review identified four studies that compared women who had a later induced abortion (in the second trimester or beyond) with women who had other perinatal losses (later miscarriage, stillbirth, or neonatal death); mental health outcomes for the two groups were comparable [71]. However, the four studies focused upon women who had induced abortions because of fetal anomalies, and none of the studies controlled for pretermination mental health.

History of pregnancy termination — Among women with a history of prior pregnancy termination, subsequent abortions generally do not appear to be related to postabortion mental disorders. As an example, a retrospective study examined women in a nationally representative sample who had a history of one induced abortion (n = 284) or more than one abortion (n = 63) [44]. Analyses that controlled for potential confounders (eg, history of prior mental disorders or violence experience) found that the rate of mood disorders, anxiety disorders, and substance use disorders were each comparable in the two groups. Information about the relationship of prior mental disorders and violence victimization with induced

abortion and mental health outcomes is discussed elsewhere in this topic. (See '[Mental disorders prior to abortion](#)' above and '[Violence victimization](#)' above.)

Pregnancy termination technique — Pregnancies can be terminated using medication or surgery. The evidence generally suggests that psychiatric sequelae for the two techniques are comparable [27,40,43,73]. As an example, a randomized trial compared medical termination with surgical termination of pregnancy at less than 14 weeks gestation in 349 women with no preference for termination technique [74]. Anxiety and depression were each assessed 12 weeks after termination, and the results indicated that emotional responses were comparable for the two techniques.

Socioeconomic status — The relationship between socioeconomic status and the psychiatric aspects of pregnancy termination is not clear. Although socioeconomic status is a risk factor for mental health disorders (eg, depressive disorders, anxiety disorders, and eating disorders) following live births [16], there is little information about income and occupation and how they affect psychological responses to pregnancy termination. One study interviewed women one week prior to a first-trimester induced abortion (n = 444), and found that negative emotional reactions were comparable among different socioeconomic groups [75]. Another study found that having an abortion for financial reasons was correlated with negative psychological responses after the procedure, but this study did not compare women of differing socioeconomic status [64].

Adolescence — Adolescents generally do not appear to be at risk for psychiatric problems following induced abortion [76]. The emotional state of adolescents before their abortions, and the degree to which they feel pressured to have abortions (by their partners rather than parents), may predict subsequent negative feelings after pregnancy termination.

A prospective two-year follow-up study of adolescents who sought pregnancy tests found that among the teens who terminated their pregnancies (n = 141), carried their pregnancy to term (n = 93), or had a negative test (n = 100) [77]:

- Levels of anxiety and other adverse psychological sequelae were lower in adolescents who had an abortion than the two control groups; among teens who chose to terminate their pregnancy, 95 percent reported no symptoms of psychological disturbance.
- Graduation from or continuation of high school was greater in adolescents who had an abortion, compared with teens who delivered or had negative tests (90 versus 69 and 79 percent).

- The rate of subsequent pregnancy was lowest in the abortion group, followed by the childbearing and negative test groups (37 and 47 and 58 percent).

Another study compared emotional responses of adolescents aged 14 to 17 years (n = 23) with adolescents and young adults aged 18 to 21 years (n = 40) four weeks following pregnancy termination, and found that depression, regret, doubt, and anger were comparable for the two groups [78].

Multifetal pregnancy reduction — Women with a multiple gestation may choose to terminate one or more of the fetuses to avoid complications of high-order multiple gestation, such as extreme prematurity. The psychological outcomes of this procedure are discussed separately. (See "[Multifetal pregnancy reduction and selective termination](#)", section on '[Psychosocial outcomes](#)'.)

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "[Society guideline links: Pregnancy termination](#)".)

SUMMARY

- Most studies suggest that induced abortion is not associated with an increased risk of mental disorders. Among women with unwanted pregnancies who either terminate a pregnancy or give birth, the long-term rate of mental illness is comparable. Postabortion mental illness is most consistently associated with pre-abortion mental illness. (See '[Evidence regarding potential outcomes](#)' above.)
- There is no convincing evidence that induced abortion increases the risk of suicidal ideation or behavior, psychosis, depressive syndromes, posttraumatic stress disorder, substance use disorders, and eating disorders. Although regret may occur, the predominant feeling is relief. Life satisfaction in the short-term appears to be worse in women who are denied an abortion. (See '[Suicide](#)' above and '[Psychosis](#)' above and '[Depression](#)' above and '[Posttraumatic stress disorder](#)' above and '[Substance abuse](#)' above and '[Eating disorders](#)' above and '[Regret](#)' above and '[Life satisfaction](#)' above.)
- In the short term, women who are denied an abortion appear to have higher rates of clinical anxiety, and lower levels of self-esteem and life satisfaction, compared with women

who have an abortion. (See ['Anxiety'](#) above and ['Self-esteem'](#) above and ['Life satisfaction'](#) above.)

- A mental disorder prior to pregnancy termination is the most important risk factor for psychiatric symptoms or diagnoses after induced abortion. Other factors that appear to be associated with increased emotional distress after pregnancy termination include low perceived or anticipated social support, current or past violence victimization, baseline ambivalence and negative attitude toward pregnancy termination, smaller current family size, and the need to terminate for fetal anomaly or health. (See ['Potential modifying factors'](#) above.)

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