

The Nurse's Role in Managing First-Trimester Bleeding

Bandery Deafalh Alhantoshi ⁽¹⁾, **Hessa Hamid Alrashidi** ⁽²⁾, **Abdulaziz Jebreen Aljebreen** ⁽³⁾, **Amal Saud Mohammed Madkhli** ⁽⁴⁾, **Mohammed Abdulla Alqahtani** ⁽⁵⁾, **Ahlam Mohammed Yahia Al Salem** ⁽⁶⁾, **Nisreen Farhan Albati** ⁽⁷⁾, **Balsam Ghazi Alotaibi** ⁽⁸⁾, **Amaal Ahmad Alzahrani** ⁽⁹⁾, **Areej Mohammed Anazi** ⁽¹⁰⁾, **Mona Menawer Almutairi** ⁽¹¹⁾, **Manal Barjas Alrashidi** ⁽¹²⁾, **Saud Daghman Aldaghman** ⁽¹³⁾, **Zainab Ali Albasha** ⁽¹⁴⁾, **Sitah Saeed Aljameeli** ⁽¹⁵⁾.

1. *Nursing specialis, Riyadh health affairs, Ministry of Health, Kingdom of Saudi Arabia. Onlyrose1967@gmail.com*
2. *Nurse, Ministry of Health, Kingdom of Saudi Arabia. hhalrashidi@moh.gov.sa*
3. *Specialist nurse, Imam Abulrahman Alfaisal Hospital, Ministry of Health, Kingdom of Saudi Arabia. aaljebreen@moh.gov.sa*
4. *Nursing specialist, Najran (Ministry of Health Branch), Ministry of Health, Kingdom of Saudi Arabia. asmadkhli@moh.gov.sa*
5. *Nursing teqnion, Riyadh branch of (moh), Public health, Ministry of Health, Kingdom of Saudi Arabia. moalqahtani.gov.sa*
6. *Specialist nursing, Abha maternity and children hospital, Ministry of Health, kingdom of Saudi Arabia. Ahmalsalem@moh.gov.sa*
7. *Nursing technician, Altaraf PHC, Ministry of Health, kingdom of Saudi Arabia. nalbuty@moh.gov.sa*
8. *Nursing, Eradah Complex and Mental Health, Ministry of Health, kingdom of Saudi Arabia. Balsamga@moh.gov.sa*
9. *Nursing, Eradah Complex and Mental Health, Ministry of Health, kingdom of Saudi Arabia. aalzahrani554@moh.gov.sa*
10. *Nursing, Eradah Complex and Mental Health, Ministry of Health, kingdom of Saudi Arabia. aranazi@moh.gov.sa*
11. *Nursing, Al-Iman General Hospital, Ministry of Health, kingdom of Saudi Arabia. malmutairi176@moh.gov.sa*
12. *Nursing Specialist, King Salman Hospital, Ministry of Health, kingdom of Saudi Arabia. Nr-manal@hotmail.com*
13. *Nursing, King Khaled Hospital, Ministry of Health, kingdom of Saudi Arabia. Saud.doghman@gmail.com*
14. *Nurse, MCH Dammam, Ministry of health, kingdom of Saudi Arabia. Zaalbasha@moh.gov.sa*
15. *Nursing Technician, King Khalid Hospital, Ministry of Health, Kingdom of Saudi Arabia. sythaljmyly@gmail.com*

Abstract

First-trimester bleeding is a common occurrence, affecting approximately 25% of confirmed pregnancies. While it can sometimes be a benign phenomenon, it may also signal serious complications such as miscarriage, ectopic pregnancy, or molar pregnancy. Primary care nurse practitioners (NPs) often serve as the first point of contact for patients concerned about early pregnancy bleeding. To ensure optimal outcomes, NPs must adopt a meticulous approach when evaluating these patients. This involves gathering a comprehensive history, performing a thorough physical examination, and utilizing appropriate diagnostic tools such as laboratory tests and imaging studies. The differential diagnosis for first-trimester bleeding includes both benign conditions, such as cervical polyps and implantation bleeding, and more serious causes like miscarriage and ectopic pregnancy. Management strategies depend on the specific diagnosis and may range from expectant management to medical or surgical interventions. In cases of miscarriage, patients should be counseled on the available options and supported in their decision-making process. Providing culturally sensitive and empathetic care is crucial, as early pregnancy loss can be a deeply emotional experience

for patients and their families. NPs are well-positioned to deliver holistic, compassionate support that addresses both the medical and emotional aspects of early pregnancy bleeding. By combining evidence-based practices with patient-centered care, NPs can significantly impact outcomes and promote the well-being of women experiencing this challenging condition.

Keywords: Nurses, First-Trimester Bleeding

Introduction

Many women experience bleeding during the first trimester of pregnancy, prompting them to seek care from their primary healthcare providers before establishing care with an obstetric specialist. Obstetric care providers frequently delay the initial prenatal visit until later in the first trimester, leaving primary care nurse practitioners (NPs) as the first point of contact for patients concerned about early pregnancy bleeding. In cases of acute hemorrhage, patients should be referred to the emergency department for urgent evaluation and treatment. However, in most non-emergent situations, the initial assessment and evaluation of first-trimester bleeding can be effectively performed in a primary care clinic. The bleeding may originate from the vagina, cervix, or uterus, and a comprehensive examination to identify the source is critical for accurate diagnosis (“The American College of Obstetricians and Gynecologists Practice Bulletin No. 150. Early Pregnancy Loss,” 2015). While transvaginal ultrasound is often the first diagnostic tool employed, it is not always the most efficient or cost-effective option. A thorough patient history and physical examination can often reveal important diagnostic clues, such as bleeding caused by a cervical polyp, vaginal infection, or labial lesion. For instance, during a speculum examination, the NP may observe products of conception in the cervix or vagina, confirming a diagnosis of spontaneous abortion (SAB) without the need for imaging, thus reducing unnecessary costs for the patient.

Utilizing a systematic approach that includes a detailed history, physical examination, laboratory tests, and imaging studies, primary care providers have numerous opportunities to identify and manage the causes of first-trimester bleeding. It is essential for primary care clinicians to recognize early warning signs during pregnancy and respond appropriately. The following discussion provides a structured, step-by-step guide to diagnosing the etiology of first-trimester bleeding and highlights the role of NPs in ensuring timely and effective care.

History

The first trimester of pregnancy represents a period of rapid and intricate embryonic and fetal development, during which a range of symptoms can prompt concern and drive patients to seek evaluation. One of the most distressing symptoms for patients is vaginal bleeding, which can raise alarms about the health of the pregnancy. First-trimester bleeding is clinically defined as any bleeding that occurs from conception up to 13 weeks and 6 days of gestation. This symptom is relatively common, with approximately 25% of women with confirmed pregnancies reporting some degree of bleeding during the first trimester (Watkins et al., 2017). The nature of the bleeding varies widely among patients, ranging from light spotting to heavier bleeding similar in volume to menstruation. It may also be accompanied by other symptoms, such as cramping or occur without any associated pain. Light spotting persisting for several days is reported by up to three-quarters of patients experiencing bleeding.

Although first-trimester bleeding can sometimes be a benign phenomenon or a normal variant of early pregnancy, it may also signal more serious complications. Among the various causes, threatened miscarriage is the most prevalent. Studies by Knez et al. and Tamizian and Arulkumaran suggest that approximately half of pregnancies complicated by first-trimester bleeding proceed to term without further complications, while the remaining 50% are associated with pregnancy loss (Knez et al., 2014; Tamizian & Arulkumaran, 2004).

To ensure optimal outcomes, primary care NPs must adopt a meticulous approach when evaluating patients with first-trimester bleeding. By gathering a comprehensive history,

Bandery Deafalh Alhantoshi ⁽¹⁾, Hessa Hamid Alrashidi ⁽²⁾, Abdulaziz Jebreen Aljebreen ⁽³⁾, Amal Sauod Mohammed Madkhli ⁽⁴⁾, Mohammed Abdulla Alqahtani ⁽⁵⁾, Ahlam Mohammed Yahia Al Salem ⁽⁶⁾, Nisreen Farhan Albati ⁽⁷⁾, Balsam Ghazi Alotaibi ⁽⁸⁾, Amaal Ahmad Alzahrani ⁽⁹⁾, Areej Mohammed Anazi ⁽¹⁰⁾, Mona Menawer Almutairi ⁽¹¹⁾, Manal Barjas Alrashidi ⁽¹²⁾, Saud Daghaman Aldaghman ⁽¹³⁾, Zainab Ali Albasha ⁽¹⁴⁾, Sitah Saeed Aljameeli ⁽¹⁵⁾.

clinicians can uncover potential causes, such as recent sexual activity, trauma, or prior gynecological procedures, which might predispose the patient to bleeding. Similarly, details about the onset, duration, and nature of the bleeding, along with any associated symptoms like abdominal pain, fever, or hemodynamic instability, can guide the diagnostic process. Past obstetric and gynecological history, including previous pregnancies, miscarriages, or conditions such as uterine fibroids, should also be thoroughly assessed. This information forms the foundation for a systematic evaluation that integrates clinical findings with appropriate diagnostic tools, ultimately ensuring the delivery of evidence-based and patient-centered care.

Assessment

The evaluation of a patient presenting with first-trimester bleeding involves a series of critical steps aimed at facilitating an accurate diagnosis and effective treatment plan. Once it is established that the patient can be safely assessed in a clinic setting, healthcare providers should follow a structured assessment process comprising multiple categories of diagnostic techniques to ensure a comprehensive evaluation. According to Watkins et al. four primary components form the foundation of an effective assessment and evaluation for this condition.

A detailed patient history is one of the most vital tools for understanding and diagnosing first-trimester bleeding. This process involves addressing 13 key variables. Questions regarding the bleeding should probe its frequency, volume, and coloration. Additional symptoms and warning signs such as dizziness, nausea, fever, or pelvic, abdominal, and lower back pain must be explored. It is essential to determine whether the pregnancy has been confirmed, the method of confirmation (quantitative versus qualitative), and the timing of confirmation. Knowledge of the patient's last menstrual period (LMP) is crucial, as it provides an estimate of gestational age and the expected due date, which are significant for diagnosis and management. Reviewing the patient's menstrual, contraceptive, obstetric, and sexually transmitted infection histories helps identify any underlying gynecological issues or concerns about potential infertility. Special attention should be directed toward a personal or family history of hematologic or autoimmune disorders, as these can contribute to abnormal bleeding profiles. A thorough review of current medications is necessary to identify any substances contraindicated during pregnancy. Additionally, social history should be examined, including queries about alcohol, tobacco, or drug use, exposure to intimate partner violence, the desirability of the pregnancy, and available social support systems.

Physical Examination

The physical examination, in conjunction with vital signs, should include an assessment of multiple systems to identify potential causes of bleeding and evaluate the overall health of both the patient and the pregnancy. The respiratory and cardiovascular systems should be examined for abnormalities such as tachycardia, murmurs, tachypnea, or shortness of breath. Skin abnormalities like diffuse ecchymosis or petechiae may suggest bleeding disorders. Abdominal pain or tenderness upon palpation could raise suspicion for a ruptured ectopic pregnancy or intra-abdominal bleeding. If the pregnancy is beyond 10 weeks of gestation, fetal heart tones can be assessed using a Doppler device. A vaginal examination, including both speculum and bimanual components, is essential. The speculum examination may identify bleeding in the vaginal vault or products of conception, while a bimanual examination can help assess uterine size relative to gestational age based on LMP.

Laboratory Tests and Imaging

Laboratory testing plays a pivotal role in confirming pregnancy and evaluating its viability. If not already performed, serum quantitative β -human chorionic gonadotropin (β -hCG) levels should be measured and repeated in 48 to 72 hours to assess their rise. An insufficient rise in β -hCG levels may indicate a nonviable or ectopic pregnancy, while a steep increase may suggest a molar pregnancy. The acceptable range of β -hCG levels varies depending on

gestational age. A complete blood cell count is recommended to evaluate for anemia resulting from excessive blood loss. It is also critical to assess the patient's Rh status through a blood type and screen. Rh-negative women should receive Rho(D) immunoglobulin within 48 to 72 hours of bleeding onset to prevent isoimmunization. Transvaginal ultrasound imaging may be necessary to determine pregnancy viability, establish gestational dating, and identify other potential causes of bleeding.

Differential Diagnosis

First-trimester bleeding can result from various causes, ranging from benign conditions to serious and potentially life-threatening complications. Common and less concerning causes include cervical polyps, hemorrhagic corpus luteum (bleeding from the ovarian follicle during ovulation), implantation bleeding, retrochorionic hemorrhage (bleeding between the fetal membrane sac and uterine wall), and vaginal abrasions. These conditions often do not require urgent medical intervention but may still necessitate patient education and monitoring. However, it is important to inform patients that approximately 50% of those with symptoms of a threatened miscarriage may ultimately experience pregnancy loss.

More serious causes of first-trimester bleeding include miscarriage (threatened or missed), ectopic pregnancy, and molar pregnancy. Each condition requires specific diagnostic approaches and patient education strategies. For example, cervical polyps may present with random vaginal bleeding, postcoital bleeding, or bleeding during a Papanicolaou test. They can often be visualized during a pelvic exam with a speculum and may be managed by leaving them in situ or referring the patient for removal. Hemorrhagic corpus luteum, associated with random bleeding in early pregnancy, can be diagnosed via pelvic ultrasound and typically requires no intervention or restrictions on activity. Subchorionic hemorrhage may necessitate pelvic rest if bleeding persists and follow-up ultrasounds to ensure resolution. Vaginal abrasions, which may present with postcoital bleeding or irritation, require confirmation that the bleeding is not from the cervical os and may be managed by advising the patient to abstain from intercourse until bleeding subsides. Understanding these differential diagnoses and their respective management approaches ensures that providers can deliver comprehensive care to patients experiencing first-trimester bleeding.

Diagnosis

The presence of vaginal bleeding during early pregnancy does not always constitute a medical emergency or confirm a miscarriage. For instance, it is critical for the provider to assess the volume of bleeding and the patient's hemodynamic stability. Once a diagnosis has been established based on presenting symptoms, the patient should be appropriately counseled regarding treatment options, which in some scenarios, such as an uncomplicated spontaneous abortion, may include expectant management. The following sections outline the diagnostic approaches, treatment modalities, and management strategies for different clinical scenarios associated with first-trimester bleeding.

Treatment

Management of first-trimester bleeding in pregnant patients who present to primary care settings is contingent upon the diagnosis or suspected etiology of the bleeding. Most cases can be safely managed in outpatient settings with close monitoring. However, some patients may require immediate intervention to mitigate the risks associated with ruptured ectopic pregnancies, significant hemorrhage, or severe pelvic infections (e.g., septic abortion or pelvic inflammatory disease). Prompt recognition of these conditions by primary care providers is essential. Patients exhibiting signs of hemodynamic instability, peritoneal symptoms (such as rebound tenderness, abdominal guarding, or tenderness to percussion), or active hemorrhage should be urgently referred to the emergency department for expeditious care. Non-pregnancy-related causes of bleeding, including traumatic, infectious, malignant, inflammatory, or

structural conditions, should be managed appropriately, with due consideration of the ongoing pregnancy, if applicable.

In the United States, standard care guidelines mandate the administration of Rho(D) immunoglobulin within 72 hours of vaginal bleeding in Rh-negative patients who are not previously sensitized, to prevent Rho(D) alloimmunization and its potential fetal complications. A 50 µg dose is adequate for first-trimester bleeding; however, due to limited product availability, a standard 300 µg dose is typically administered.

Viable Intrauterine Pregnancy

When transvaginal ultrasound confirms a viable intrauterine pregnancy, a diagnosis of threatened abortion is made. Patients should be informed that the majority of pregnancies with early vaginal bleeding continue to term (Haas et al., 2019; Hasan et al., 2010). However, moderate to heavy vaginal bleeding (comparable to or greater than a menstrual flow) is associated with a miscarriage rate of approximately 24%, while light bleeding correlates with a lower rate of approximately 2.6%. Short-interval follow-up with β-hCG levels and repeat ultrasounds may be warranted for patients diagnosed with a threatened abortion.

Many patients seek advice on restrictions or interventions that might improve the outcomes of desired pregnancies. However, no evidence supports interventions such as pelvic rest, supplements, or medications in reducing the risk of progression from a threatened to a spontaneous abortion. Hence, these are not recommended. Providers should assess for and address any medical comorbidities or modifiable risk factors within the clinical context.

Nonviable Intrauterine Pregnancy

Nonviable pregnancies, including anembryonic gestation, embryonic demise, and incomplete abortions, can be managed expectantly, medically, or surgically. Management options for stable and uncomplicated cases should align with patient preferences, as all approaches have been demonstrated to be safe and effective (Neilson et al., 2013). In cases of persistent heavy bleeding, hemodynamic instability, or infection, surgical management is required to promptly evacuate the uterine contents. Comprehensive educational materials on management options are available through resources like the Reproductive Health Access Project.

Expectant Management

For clinically stable patients without infection, expectant management allows for the spontaneous passage of products of conception. Observational studies indicate that 70–84% of women experience complete spontaneous miscarriage within two weeks of a nonviable pregnancy diagnosis. This approach is more effective in cases of incomplete abortion and less effective with missed abortion or anembryonic gestation (Casikar et al., 2010). Routine antibiotic use is neither necessary nor recommended unless signs of infection are present.

Counselling Considerations:

- Patients should be informed that spontaneous passage of products of conception can take up to eight weeks or more, though most occur within two weeks.
- Bleeding often begins lightly, progresses to moderate or heavy with bright red blood and clotting accompanied by cramping, and tapers after approximately four hours. Light bleeding may persist for 1–2 weeks and can intermittently start and stop.
- Education on bleeding and infection precautions is critical, along with instructions for contacting on-call providers after hours.
- Patients may opt to change their management plan at any time.

Follow-Up:

- Post-passage follow-up, typically within 1–2 weeks, should include β-hCG measurement or a transvaginal ultrasound if indicated, along with discussions to address concerns or emotional processing.

- Expectant management may continue as long as the patient remains stable without signs of infection. If desired, patients can transition to medical or surgical management at any point.

Medical Management

Recent evidence highlights the superiority of combining mifepristone, a progesterone receptor antagonist, with misoprostol, a prostaglandin analog, over using misoprostol alone for the medical management of nonviable pregnancies in the first trimester (Schreiber et al., 2018). However, due to Food and Drug Administration (FDA) restrictions, access to mifepristone remains limited in the United States. It is not available in retail pharmacies and cannot be prescribed directly to patients. Instead, it can only be dispensed by clinicians who meet specific manufacturer requirements and have undergone training and approval through the manufacturer's program. This regulatory framework limits its routine use by primary care nurse practitioners. Referral to women's health clinics that stock mifepristone on-site may be appropriate if such facilities are available locally.

Misoprostol, a synthetic prostaglandin E1 analog, primarily induces uterine contractions for uterine evacuation while also promoting cervical softening and dilation. It is available in both generic and brand-name forms in the United States. Various protocols are used for its administration (Kim et al., 2017), but the American College of Obstetricians and Gynecologists recommends an initial dose of 800 µg administered vaginally, with a second dose, if necessary, no sooner than three hours and typically within seven days after the initial dose, should expulsion remain incomplete. Most patients undergoing this treatment experience moderate to significant cramping and vaginal bleeding with clotting, akin to a heavy menstrual period, lasting between two and six hours. Light to moderate bleeding may continue for seven to fourteen days. Providers should supply prescriptions or guidance on over-the-counter pain relievers, though opioids are generally unnecessary and not routinely recommended for pain management. Vaginal administration is associated with fewer side effects, though nausea, vomiting, chills, and diarrhea may still occur. When misoprostol is administered orally or buccally, these side effects are more pronounced, necessitating the use of an antiemetic.

Surgical Management

Surgical resolution of a nonviable pregnancy in the first trimester is achieved through manual vacuum aspiration, vacuum curettage, or sharp curettage, all of which are safe and effective methods. These procedures are typically performed by women's health specialists, most commonly obstetricians and gynecologists. Manual vacuum aspiration is usually conducted in an office setting under local anesthesia, whereas vacuum and sharp curettage are generally performed in ambulatory surgery centers or hospital operating rooms. The advantages of surgical management include faster resolution, with procedures typically lasting 10 to 20 minutes and demonstrating equal or greater efficacy compared to medical management. Additionally, patients undergoing surgical management often require fewer follow-up visits, ultrasounds, or unplanned hospital visits compared to those managed expectantly or medically. Patients with hemodynamic instability or symptoms suggestive of infection should be referred to an emergency department for evaluation and management. Stable patients may be referred on an urgent or routine outpatient basis depending on clinical circumstances. Anticipatory guidance for manual vacuum aspiration, including patient education materials, is available on the Reproductive Health Access Project's website.

Ectopic Pregnancy and Gestational Trophoblastic Disease

Although ectopic pregnancy is relatively rare, with an incidence rate of approximately 0.64%, it must be considered in all pregnancies due to its potential for significant maternal morbidity and mortality. Over 90% of ectopic pregnancies occur in the fallopian tubes. Treatment options include medical management with methotrexate, a folate inhibitor, or surgical intervention via salpingostomy or salpingectomy. Medical therapy is suitable for hemodynamically stable

Bandery Deafallh Alhantoshi ⁽¹⁾, Hessa Hamid Alrashidi ⁽²⁾, Abdulaziz Jebreen Aljebreen ⁽³⁾, Amal Sauod Mohammed Madkhli ⁽⁴⁾, Mohammed Abdulla Alqahtani ⁽⁵⁾, Ahlam Mohammed Yahia Al Salem ⁽⁶⁾, Nisreen Farhan Albati ⁽⁷⁾, Balsam Ghazi Alotaibi ⁽⁸⁾, Amaal Ahmad Alzahrani ⁽⁹⁾, Areej Mohammed Anazi ⁽¹⁰⁾, Mona Menawer Almutairi ⁽¹¹⁾, Manal Barjas Alrashidi ⁽¹²⁾, Saud Daghaman Aldaghman ⁽¹³⁾, Zainab Ali Albasha ⁽¹⁴⁾, Sitah Saeed Aljameeli ⁽¹⁵⁾.

patients with confirmed unruptured ectopic pregnancies and no contraindications to methotrexate. Surgical management is indicated for patients with hemodynamic instability or symptoms indicative of a ruptured ectopic mass. In such cases, emergency evaluation and treatment are warranted. For stable patients with access to specialized women's health providers, urgent referral is recommended. Although this article does not cover ectopic pregnancy management in detail, evidence-based resources are available for further information.

Care After an Early Pregnancy Loss

Follow-up care in the office setting after the resolution of a nonviable pregnancy should encompass several critical assessments and interventions. These include the evaluation for acute blood loss anemia, which may be a sequela of significant bleeding. Counseling regarding contraception options or preconception planning is essential to address the patient's reproductive goals. Women with recurrent pregnancy loss, defined as the loss of three or more consecutive pregnancies, should be offered referrals to specialists such as maternal-fetal medicine providers, fertility specialists, and genetic counselors for further evaluation and management. Additionally, the need for psychosocial support should be assessed, including consideration for referrals to therapists or grief support groups for emotional well-being.

Research published in 2015 indicates that numerous misconceptions about early pregnancy loss persist (Bardos et al., 2015). Consequently, it is crucial to educate patients on the prevalence and etiology of miscarriage. Miscarriage is a common occurrence, affecting up to 20% of recognized pregnancies, and in more than 50% of cases, it is attributed to chromosomal abnormalities in the embryo or fetus. Despite this, it is not uncommon for women to harbor feelings of guilt, shame, or isolation, accompanied by the belief that they could have prevented the loss. It is vital to reassure patients that activities such as exercise, heavy lifting, stress, previous sexually transmitted infections, past contraceptive use, and prior abortions are not linked to an increased risk of early pregnancy loss.

In providing care after early pregnancy loss, it is essential to incorporate religious and cultural sensitivity, as these factors play a significant role in the patient's experience and perception of the event. For some individuals and communities, early pregnancy loss may be regarded as equivalent to the loss of a child, underscoring the need for culturally appropriate and empathetic care (Bardos et al., 2015). Nurse practitioners (NPs) are particularly well-positioned to deliver holistic, compassionate support to patients and their families, addressing not only their medical needs but also their emotional and spiritual concerns during this challenging time.

Health Promotion

Health promotion strategies related to bleeding during the first trimester of pregnancy must be individualized, reflecting the cause of the bleeding, the diagnosis, and whether the pregnancy is viable or nonviable. In cases where the pregnancy is deemed viable and the patient wishes to continue the pregnancy, reassurance is a key component of care. Providers should guide the patient on what to expect for the remainder of the pregnancy, addressing potential complications and providing clear information on abnormal symptoms such as bleeding or pain, which may vary by trimester.

When a viable pregnancy is undesired, timely referral to an appropriate provider for pregnancy options counseling is critical. Ensuring that the patient is aware of her options and facilitating access to the necessary resources supports her autonomy and decision-making.

If the pregnancy is determined to be nonviable, the discussion should shift to the available treatment options and the management of the miscarriage. Research has shown that advancing maternal age is associated with an increased risk of miscarriage. However, a single spontaneous abortion (SAB) does not heighten the likelihood of subsequent losses. Conversely, women who have experienced recurrent miscarriages may face up to a 50% increased risk of another loss,

warranting a comprehensive infertility evaluation by a specialist. Referral to other specialists, such as hematologists or endocrinologists, may also be appropriate to investigate underlying conditions that could contribute to bleeding during pregnancy or recurrent pregnancy loss (Surette & Dunham, 2019).

Ultimately, health promotion efforts for women experiencing early pregnancy bleeding should be patient-centered and therapeutic. The care provided should be tailored to the individual's unique circumstances, offering support and reassurance that aligns with her clinical and emotional needs. By fostering a collaborative and empathetic approach, healthcare providers can help patients navigate the complexities of early pregnancy bleeding and loss with greater confidence and resilience.

Conclusion

Nurses, particularly nurse practitioners, play a vital role in the management and support of women experiencing first-trimester bleeding or early pregnancy loss. By combining thorough assessments, evidence-based interventions, and empathetic care, nurses can significantly impact patient outcomes during this emotionally and physically challenging time. This multifaceted approach includes evaluating physical health, addressing psychosocial needs, and offering education on misconceptions related to pregnancy loss. Nurses' expertise in navigating both clinical and emotional dimensions of care ensures a patient-centered approach that fosters trust, comfort, and resilience. By integrating cultural sensitivity and holistic care, nurses are uniquely positioned to guide women and their families through early pregnancy challenges, contributing to improved health outcomes and emotional well-being.

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