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REVIEW

Comprehensive approach to postpartum haemorrhage from a nursing perspective

Abordaje integral de la hemorragia postparto desde la práctica de enfermería

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ABSTRACT

This study addressed postpartum haemorrhage (PPH) as one of the leading causes of maternal mortality in Ecuadorian hospitals. It analysed the classification of PPH into primary and secondary, its causes, clinical manifestations, pathophysiology, and treatment. Uterine atony was highlighted as the most frequent factor, followed by trauma, tissue retention, and coagulopathies. In addition, multiple risk factors that compromised maternal health were identified, such as multiple pregnancies, foetal macrosomia, previous caesarean sections, and prolonged labour. The study showed that many of the deaths could have been prevented through timely and appropriate intervention by health personnel, especially nursing professionals. In this regard, the Nursing Care Process (NCP) was analysed as a key tool for ensuring effective, evidence-based care. Dorothea Orem's self-care theory, which proposed the active participation of women in their recovery process, was also integrated. The importance of intervention strategies focused on constant monitoring, administration of uterotonics, comprehensive clinical assessment, and interprofessional coordination was highlighted. Finally, the regulatory support of the Free Maternity Law was highlighted as a legal framework that guaranteed access to adequate care. This research contributed significantly to the training of nursing professionals and the strengthening of a preventive approach to PPH.

Keywords: Postpartum haemorrhage; uterine atony; nursing care; risk factors; self-care.

RESUMEN

Este estudio abordó la hemorragia postparto (HPP) como una de las principales causas de mortalidad materna en el ámbito hospitalario ecuatoriano. Se analizó la clasificación de la HPP en primaria y secundaria, sus causas, manifestaciones clínicas, fisiopatología y tratamiento. Se destacó que la atonía uterina representó el factor más frecuente, seguido por traumas, retención de tejidos y coagulopatías. Además, se identificaron múltiples factores de riesgo que comprometieron la salud materna, como embarazos múltiples, macrosomía fetal, cesáreas previas y partos prolongados. El trabajo evidenció que gran parte de los fallecimientos pudo haberse evitado mediante una intervención oportuna y adecuada por parte del personal de salud, especialmente del profesional de enfermería. En este sentido, se analizó el Proceso de Atención de Enfermería (PAE) como herramienta clave para garantizar una atención efectiva y basada en evidencia. También se integró la teoría del autocuidado de Dorothea Orem, que propuso la participación activa de la mujer en su proceso de recuperación. Se resaltó la importancia de estrategias de intervención centradas en la vigilancia constante, administración de uterotónicos, valoración clínica integral y coordinación interprofesional. Finalmente, se destacó el respaldo normativo de la Ley de Maternidad Gratuita como marco legal que garantizó el acceso a una atención adecuada. Esta investigación contribuyó significativamente a la formación del profesional de enfermería y al fortalecimiento del enfoque preventivo frente a la HPP.

Palabras clave: Hemorragia postparto; atonía uterina; cuidados de enfermería; factores de riesgo; autocuidado.

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INTRODUCTION

This research is based on fundamental facts, reviewing the importance of a condition such as postpartum hemorrhage, which can be seen as the second leading cause of maternal mortality. This situation has remained unchanged in recent years, accounting for 14,94 % of all deaths in Ecuador. There is an undeniable need for nursing as a discipline related to science to create and develop knowledge regarding each of its branches, such as gynecological-obstetric nursing and its role in patients with postpartum hemorrhage, to strengthen the current care mechanisms available to professional nurses, such as their systematic Nursing Care Process, and given the possibility of creating new care models that guarantee the effectiveness of the therapeutic regimen chosen and applied by these health professionals.(1)

Dorothea Oren's theory emphasizes patient self-care as a regulatory function that each person must apply deliberately to maintain their life, health, well-being, and development in an optimal state. Dorothea Orem defines the objective of the nursing professional as helping patients retain their self-care actions to keep their lifestyle and achieve stable health.(2)

This thesis is highly relevant as a final project for my degree because in hospital practice, there is a high incidence of this pathology in obstetric areas, which has been a frequent cause of maternal mortality at the hospital level. One of the factors that leads to this condition is poor management by health personnel, often due to omission. Therefore, it is considered necessary to gather information on the nursing care process applied to this pathology to improve and update the knowledge of nursing professionals.

During the internship, incorrect management and a lack of knowledge among healthcare professionals regarding the prevention of PPH were observed, as well as a lack of self-education on the subject, despite the extensive literature available. This became a fundamental motivation for developing a study and solution to the problem. The Nursing Care Process is a tool that directly benefits the nursing role and enables the application of appropriate care in postpartum hemorrhage. When properly executed, these methods facilitate adequate and positive decision-making for the patient.(3)

Ultimately, the impact of this research will be reflected in the prevention of complications through education and promotion, both before, during, and after pregnancy, which is considered an economically beneficial and feasible approach to reducing the morbidity and mortality rates associated with this issue. In the academic sphere, the completed work will be helpful for readers seeking to update and develop their future studies.

DEVELOPMENT

Postpartum hemorrhage

Primary or immediate postpartum hemorrhage (PPH) is defined as blood loss greater than 500 ml in vaginal delivery and greater than 1000 ml in cesarean delivery or in any blood-related procedure that causes hemodynamic instability regardless of the type of delivery.(4)

On the other hand, Luis García-Benavides et al.(5)state that currently, postpartum hemorrhage is the leading obstetric cause of mortality in developed and developing countries, meaning that 140 000 women die each year from postpartum bleeding. PPH is also understood to mean any blood loss that causes hemodynamic compromise in the postpartum period.

According to the World Health Organization(6), PPH is the leading cause of nearly a quarter of all maternal deaths worldwide. Most maternal deaths occur within the first 24 hours after giving birth. They can be prevented through the prophylactic use of uterotonic agents during the delivery phase and through adequate and appropriate treatment.

While it is true that postpartum hemorrhage occurs when patients suffer a blood loss of 500 ml during a natural vaginal delivery, on the other hand, in patients who give birth by cesarean section, a loss of more than 1000 ml is recorded when it is directly related to a decrease in blood volume, which causes dizziness in patients. because it is a minor situation, doctors end up underestimating this situation in most cases.(1)

Classification of postpartum hemorrhage

Postpartum hemorrhage is classified into two groups: the first group is primary or immediate postpartum hemorrhage, while the second group is secondary or delayed postpartum hemorrhage.

Primary-immediate postpartum hemorrhage

Primary or immediate PPH occurs within 24 hours, with blood loss greater than or equal to 1000 ml, accompanied by signs and symptoms of hypovolemia, regardless of the mode of delivery.

However, Di Marco et al.(7)report that this type of primary hemorrhage develops within 24 hours after the newborn is born, although in practice it is difficult to accurately estimate the amount of blood lost after delivery.

The leading cause of this type of hemorrhage is uterine inertia in 70 % of cases, which causes the patient to bleed, directly affecting her blood volume and leaving her in a compromising state of health.

Secondary-Late Postpartum Hemorrhage

This type of hemorrhage occurs within 24 hours after delivery and can even happen up to six weeks postpartum. Most cases are due to retention of products of conception, infection, or both.

This type of hemorrhage is one of the most feared by pregnant women, as it is one of the leading causes of death among expectant mothers. For this reason, nursing staff have the task of monitoring blood loss within the first 24 hours after delivery to prevent complications related to the loss of essential nutrients from the patient due to hemorrhage, which could lead to further health complications and possible clotting, resulting in serious complications.

Risk factors for postpartum hemorrhage

When postpartum hemorrhage occurs, it is normal for complications to arise that endanger the health of patients. In many cases, this happens due to a lack of medical monitoring, whether due to a lack of financial resources or simply cultural factors, which means that at the time of delivery, unexpected circumstances arise that put the life of the baby and the mother at risk due to the absence of monitoring during the gestation period. The symptoms of postpartum hemorrhage include:

- Uncontrollable bleeding.
- Hypotension.
- Tachycardia.
- Decrease in red blood cells.
- Inflammation and pain in the vagina and surrounding areas.

For this reason, a author establishes that a significant proportion of births in our society are at risk of complications often caused by economic factors, poor-quality health services, or a lack thereof. In light of this, the author establishes the following risk factors.

Table 1. Risk factors for postpartum hemorrhage

Constant stops in the delivery process
Uterine overdistension
Use of oxytocin during labor
History of postpartum hemorrhage
Previous cesarean section or other uterine interventions
Anemia
Placenta previa or placental abruption
Fetal death
Gestational hypertensive syndrome
Prolonged or precipitous labor
Coagulation disorders
General anesthesia
Uterine inversion
High blood pressure

Source: Román-Soto et al.(8)

All these factors are the main ones when postpartum hemorrhage occurs, causing constant bleeding. The risk factor that most commonly causes this condition is placenta previa or placental abruption, often resulting from endometrial contractions.(4)

If the patient suffering from postpartum hemorrhage is over 35 years of age or is a teenager, there is a high percentage of her suffering from this type of medical condition. The most common risk factors are related to uterine distension associated with multiple pregnancies, fetal macrosomia, polyhydramnios, prolonged or dysfunctional labor, and the use of relaxing anesthetics.(9)

Table 2. Precedents of postpartum hemorrhage

Present before delivery and associated with a substantial increase in the incidence of PPH		
Factor	Probability	4T
Suspected or confirmed placental abruption	13	Thrombin
Known placenta previa	12	Tone
Multiple pregnancy	5	Tone
Preeclampsia, gestational hypertension	4	Thrombin
Present before delivery and associated with a low increase in the incidence of PPH		
Previous PPH	3	Tone Tone Tone -----
Asian ethnicity	2	
Obesity (BMI >35)	2	
Anemia (Hb <9g/dl)	2	
Present during labor and delivery.		
Emergency cesarean section	4	Trauma
Elective cesarean section	2	Trauma
Induction of labor	2	
Retained placenta	5	Tissue
Medial-lateral episiotomy	5	Trauma
Assisted vaginal delivery (forceps/vacuum)	2	Trauma
Prolonged labor (>12 hours)	2	Tone
Fetal macrosomia (>4 kg)	2	Tone
Pyrexia during labor	2	Thrombin
Age over 40 years, primipara	1,4	Tono

Source: Cruz Cordova et al.(10)

Pathophysiology of postpartum hemorrhage

The myometrium is made up of the muscular walls of the uterus, which are surrounded by muscle fibers. During the birthing process, these contract and retract, causing the myometrium to thicken and the intrauterine volume to decrease. Because the placenta cannot contract, it begins to separate from the uterus due to the decrease in volume. With the separation of the placenta, the uterus becomes firm and globular, reaching the abdomen and sometimes even the midline of the abdomen.

At the end of pregnancy, there are 500 to 800 ml of blood, which travel through the bloodstream to the placenta every minute. The separation of the placenta causes blood vessels to rupture, leading to bleeding and continuous contractions. Coordinated by the myometrium, which compresses the local vessels to control bleeding in the placental bed and allows a clot to form. When there is a lack of coordination in the contractions of the uterus, its blood vessels do not contract, which causes bleeding. In this situation, we can say that the degree of blood loss depends on the separation of the placenta from the uterus, and its expulsion depends on how quickly the placenta separates from the uterine wall and the effectiveness of the contractions on the placental bed during and after separation.

Causes of postpartum hemorrhage

The leading cause of this type of hemorrhage is uterine atony, which, according to the World Health Organization (WHO), is one of the leading causes of postpartum hemorrhage. Genital trauma, such as vaginal or cervical lacerations, which occur during childbirth, may also occur after postpartum hemorrhage.(11)

Other causes associated with this condition include the presence of placental tissue, uterine rupture, maternal coagulation disorders, etc. according to information provided by the International Council of Nurses, which states that after uterine atony, which accounts for 80 % of the primary causes of this type of hemorrhage, the second leading cause is endometritis, which is also a relevant factor in the presence of this condition.

Clinical manifestations

Clinical manifestations based on postpartum hemorrhage are established according to blood loss >500 ml in normal delivery and >1000 ml in cesarean section. The causes of this condition are: uterine atony, placental retention, placental remains, birth canal trauma, placental accreta, and hidden hemorrhages. For this reason, a author establishes the following manifestations:

Table 3. Causes of postpartum hemorrhage according to the 4Ts

Type	Cause	Percentage of cases %
1. Tone	Uterine atony	70
2. Trauma	Cervical or vaginal injury, uterine rupture	20
3.Tissues	Placenta retention or Clots	10
4. Thrombin	Pre-existing coagulopathy or Acquired	< 1

Table 4. Clinical manifestations of postpartum hemorrhage

Clinical manifestations	Concept
Uterine atony	This is characterized by signs and symptoms such as “the inability of the uterus to contract and maintain contraction during the immediate postpartum period.”
Placental retention	This complication is evidenced by “the placenta remaining retained after approximately 30 minutes or a slightly longer period.”
Placental remains	This is another condition that leads to the development of PPH. The clinical manifestations of this complication are defined as “the presence of placental tissue that remains attached to the wall of the uterus, leading to hemorrhage because the uterus cannot contract to prevent it.”
Placental accreta	Its clinical manifestations present as abnormal adhesion of the placenta to the uterus.
Placenta accreta	The chorionic villi implant themselves, adhering to the endometrium and then passing through the basal decidua to finally reach the myometrium.
Placenta increta	The chorionic villi insert themselves into the muscles of the uterus and then invade the entire myometrium.
Placenta percreta	The chorionic villi penetrate the entire myometrium and invade the serous layer of the uterus.

Source: Paccha (12)

Postpartum hemorrhage due to trauma to the organs that make up the birth canal

According to a author, these lacerations can occur in the following forms: upper lesions, lower lesions, and hidden lesions.

Treatment for postpartum hemorrhage

All patients who have this type of hemorrhage or are suspected of having it, in most cases, receive the same treatment given for all types of hemorrhages. The effectiveness of their blood circulation is assessed by measuring their pulse, heart rate, blood pressure, and examining the perineal region.

The preferred position for the patient is the Trendelenburg position, with two intravenous lines containing crystalloids, colloids, and blood packs in cases where the patient has lost between 1 and 2 liters of blood. It is necessary to consider the alternative of transfusion. After this assessment, in some cases, it is necessary to consider the alternative of the 4 Ts treatment, which includes: tone, trauma, tissue, and thrombin.(3)

Table 5. Injuries to the birth canal

Lesions	Concept
Upper injuries	The most common is uterine rupture (which manifests itself in both fetal and maternal symptoms, with bradycardia and loss of fetal well-being, and in the mother, signs of hypovolemia, constant abdominal pain, and high intensity).
Lower injuries	The most frequent injuries are lacerations of the birth canal, at the perineal and vulvar level, as well as cervical lacerations, which in these cases "hemorrhage can be a side effect." The characteristics of this are "persistent bleeding, much less atony, and tissue retention."
Occult hemorrhages	These are an additional and rare cause of postpartum hemorrhage and can be triggered by "injuries to the artery that supplies the uterus or uterine artery."

Source: Aldo (13)

Tone

Uterine atony must always be treated when it occurs during the postpartum period. In some cases, uterine massage is sufficient to stimulate the uterus and stop bleeding. For this reason, a author states that the person responsible for performing this procedure should place their hands on the lower part of the uterus so that they can remove any tissue or clots that may be preventing proper contractions without the need for excessive compression of the bottom of the uterus, as this can cause uterine inversion.

When the massage is performed too forcefully, it can prevent the uterus from contracting properly, which worsens the bleeding. This type of complication can also be treated with medications called uterotonics, which help the uterus contract. Oxytocin, an endogenous hormone, can also be administered at a dose of 20-40 units in 1 liter of Ringer's lactate at a rate of 600 ml/hour to ensure smooth contractions.(14,15,16)

Another alternative is to administer misoprostol at a dose of 1 mg rectally, which is effective in cases of postpartum hemorrhage after failure of oxytocin and methylergometrine. Uterotonics that require proper storage are as follows:

- Ergometrine or methylergometrine: store at 2 °C to 8 °C, do not freeze, protect from light.
- Misoprostol: keep in blister pack at a temperature below 30°C
- Oxytocin: 2 °C to 8 °C/below 30 °C, according to the storage conditions stated on the secondary packaging; does not require freezing.

For this reason, this type of practice prevents excessive bleeding from postpartum hemorrhage in order to efficiently protect the patient's health, using appropriate medications after delivery with the primary objective of preventing blood loss and the onset of diseases such as anemia caused by this condition.(15)

Trauma

The injuries that can occur as a result of this type of hemorrhage are related to the pelvic, upper vaginal, distal vaginal, vulvar, and periclitoral regions, and their repair is linked to the identification and control of the hemorrhage. Suppose the patient is suspected of having a uterine rupture. In that case, an ultrasound must be performed to identify whether intra-abdominal fluid or a pelvic ultrasound is causing the condition, helping to assess the condition of the myometrial tissue in search of a solution of continuity and to look for free peritoneal air.(17,18,19)

If hematomas are found, direct pressure should be applied to the affected area. This helps to control the hemorrhage and bleeding known as perineal bleeding, as well as vaginal bleeding, and cervical lacerations. If the bleeding originates from the uterus, it can be stopped by tamponade of the uterine cavity. This obstruction can be performed with an absorbent towel or gauze, which is placed in the uterine cavity.

Lesions may appear several hours after delivery due to the presence of rectal pelvic pain and abnormal vital signs. In these cases, arterial embolization is required. In more serious situations, an incision and drainage may be used. Hematomas caused in the uterus cannot be manipulated if they have not been removed.(20)

For this reason, a study states that applying continuous pressure can prevent the hematoma from expanding. In this case, patients are cared for and monitored by an obstetrician. For successful treatment, an ultrasound should be performed to look for intra-abdominal fluid and evaluate the myometrial tissue. If the obstetrician-gynecologist identifies lacerations or hematomas, the patient must be admitted for continuous monitoring and administration of medications that facilitate the patient's speedy recovery.

Placental tissue retention

When referring to this type of tissue, it means that the placenta is well-attached to the uterine wall, extending into the muscle itself. We can infer that retained placental tissue is present when an echogenic mass is observed within the uterus on ultrasound. The most recommended procedure is manual removal of the placenta and its remains. If this does not produce results, curettage may be used.(16,21)

When the presence of this tissue is confirmed, it can be determined that manual removal is necessary. This procedure is excruciating, but it is essential because if it is not performed, the patient may suffer a uterine infection. To perform this procedure effectively, ultrasound should be used.

Nursing care for postpartum hemorrhage

General nursing care

The professional nurse must focus on the woman's physiological recovery, her psychological well-being, her ability to care for herself, and her responsibility for caring for the new baby. The professional must apply all their knowledge to meet the needs of the mother and family during this crucial period, when the mother is recovering from the physical process of childbirth.(22,23)

The fundamental role of the nursing professional during this stage is to monitor the new mother's recovery and promptly identify any deviation from normal processes in order to provide the appropriate treatment. This stage is the main time to initiate breastfeeding, as this important step promotes uterine contraction and therefore prevents maternal hemorrhage.(24,25)

Nursing assessment

Patients can be assessed as their clinical condition evolves. In order to make a more accurate diagnosis, a verbal report from the professional in charge of the labor is needed to determine the conditions that led to the mother suffering such a hemorrhage. This condition can be caused by induced labor, macrosomia, multiparity, and other factors that present the greatest danger in the postpartum stage.(26,27,28)

For this reason, the patient's needs must be determined through a physical examination that assesses her condition. In addition, an assessment of skin and mucous membrane color, breast turgor, uterine involution, lochia, perineum, bladder, and bowel function must be performed, and vital signs must be measured every 15 minutes after delivery.(29,30,31)

In this situation, it can be determined that additional tests are necessary to ascertain the patient's condition, as well as a complete blood count to determine hemoglobin and hematocrit levels, which help healthcare personnel evaluate the volume of blood loss during delivery and consider preventive measures that allow the nursing professional to perform an efficient analysis of the blood loss, provided that this is within their competence.(32,33,34)

Information gathering is essential for understanding the actual condition of patients, enabling a more accurate assessment of their condition. For this reason, the author Aldo(17)establishes that nursing staff have their tools to obtain information for individualized and standardized application based on the needs of patients. The following is a description of how information is gathered:

Table 6. Different types of assessment

Assessment method	Function
Cephalocaudal assessment method	This type of assessment follows the order of the body's organs, starting with the general appearance of the head, moving on to the extremities, and ending with the back.
Apparatus and system assessment method	This type of assessment addresses the general appearance, as well as the assessment of vital signs, following the assessment of each system independently, bearing in mind that the areas affected will be assessed first.
Assessment method by functional patterns according to Marjorie Gordon	This method allows for the identification of physiological, emotional, psychological, and behavioral health problems or conditions. Thus, when one or more of these patterns are altered in an individual, we can determine a nursing diagnosis and, based on this, carry out the appropriate interventions.

Source: Bula et al.(18)

Nursing actions in postpartum hemorrhage

Nursing staff are vitally important in the medical field. For this reason, in the event of PPH, immediate action must be taken based on the clinical picture presented. If necessary, the obstetric

red protocol is activated, which involves four areas simultaneously: communication, resuscitation, monitoring, and investigation of the cause.(19,35)

In this situation, a study defines that "For there to be proper control of this type of hemorrhage" define that "In order for there to be proper control of this type of hemorrhage, there must be multidisciplinary coordination between the areas of nursing, anesthesia, and obstetrics." If the hemorrhage cannot be controlled with general measures, the main task in this situation is to restore hemodynamic stability.(36,37,38)

The main actions of nursing staff in this situation are as follows:

Nursing intervention strategies

Nursing intervention strategies can be defined as a management tool that enables professionals to make informed decisions based on patients' needs, as well as to be adequately prepared in the environment to achieve efficiency and quality in the services provided. For this reason, the aim is to improve care for patients with immediate PPH.(39,40,41)

Table 7. Actions of nursing staff

Monitor vital signs, which must be monitored and recorded every 15 minutes for two hours and then every 30 minutes.
Pulse oximetry should be maintained above 95 %.
Ensure at least two good-quality, patent venous accesses. At least one with a No. 14 or 16 catheter is recommended.
Maintain a patent IV line and constant fluid flow to prevent hypovolemia.
Monitor urine output.
Have blood products available for blood transfusion if necessary.
Blood sampling for coagulation control.
Administer IV medication if the patient reports pain and evaluate the effectiveness of the measures taken to control that pain.
Prepare uterotonic drug infusion to correct uterine atony, assisted by manual massage of the uterus to evacuate clots.
Assess and quantify blood loss. If the presence of placental remains is confirmed, the nurse should prepare the patient for curettage.

To achieve an effective strategy, it is necessary to consider the strategic objectives, which are the most appropriate way to meet the objectives set based on the needs of the patients. According to the author, the following aspects must be considered to determine the most effective strategy:

- Improve the level of patient care.
- Analyze the institution's capacity to provide services to users.
- Analyze the level of user satisfaction based on their needs and requirements.(20)

To be more specific about the actions that should be taken based on the needs of the institution, it is necessary to focus the strategy on improving staff care, as outlined below:(42,43)

- Extend service hours to meet objectives if necessary and depending on patient volume.
- Reduce the size or scope of the objective; this tactic is applied when the vision is appropriate.
- Obtain new resources. This tactic is only considered when new capabilities are necessary to achieve the desired goals.
- Improve the action protocols of nursing staff when dealing with postpartum hemorrhage.
- Have all the necessary equipment to deal with this clinical problem.

Nursing care process (NCP) in postpartum hemorrhage

The NCP is a term used to describe the interventions carried out by nursing professionals to improve patient health. It consists of five parts, which are:

- Assessment: examine the information provided on the patient's state of health, identifying any risks that may cause problems in the future.
- Diagnosis: analyzing the real and existing problems in order to proceed with the appropriate care plan for the case, always considering the available resources.
- Planning: setting objectives and care intervals, establishing a care plan to meet the objectives set.
- Implementation: the care plan is applied.
- Evaluation: the patient is assessed to see if the objectives are being met; if not, the plan must be modified.(21)

Legal

Based on the needs and requirements of patients suffering from conditions such as postpartum hemorrhage, there are regulations in place to support these types of patients, which are outlined below:

Table 8. Diagnostic label for postpartum hemorrhage

Assessment	Diagnostic labels	NOC (outcomes)	NIC (interventions)
Blood loss	Domain 2: Nutrition Class 2: Hydration Tags Diagnostic: 00027 volume deficit fluid Related to significant of volume of liquids evidenced by increased heart rate pulse	0602 hydration Indicator: 060202 moist moist mucous membranes Severely compromised 1 Substantially compromised 2 Moderately compromised 3 Slightly compromised 4 Not compromised 5	4120 handling of: Monitor vital signs Control intake and elimination Perform bladder catheterization Administration of as appropriate

Source: Tello (22)

Table 9. Law on free maternity care and childcare

Article	Function
Art.	Every woman has the right to free, quality health care during pregnancy, childbirth, and the postpartum period, including complications, as well as access to sexual and reproductive health programs. Similarly, health care shall be provided free of charge to newborns and children under the age of five as a public health measure and the responsibility of the State.
Art. 2	Refers to timely maternity care at different levels of complexity for prenatal care and, in the case of sexually transmitted diseases, basic treatment regimens (except AIDS), care for normal and high-risk deliveries, cesarean sections, postpartum care, obstetric emergencies, including those resulting from domestic violence, toxemia, hemorrhages, and sepsis during pregnancy, childbirth, and postpartum, as well as the provision of blood and blood products, and obstetric complications, in accordance with current Ministry of Public Health regulations.
Art. 6	In coordination with the Ministry of Public Health, municipalities may develop education, promotion, information, and communication programs that favor the application of this Law and generate and implement mechanisms in dispersed rural areas that guarantee the timely transport of obstetric, neonatal, and pediatric emergencies to centers with more complex care, all in accordance with the standards established by the Ministry of Health.
Art.	The Ministry of Public Health shall define the national standards that guarantee the application of this Law and the criteria for the accreditation of health services in accordance with the provisions of the Law on State Decentralization and Social Participation and with the creation of the National Health System.
Art. 8	Repeal of regulations that conflict with this law and with good postpartum care.
Art.	In applying this Law, priority shall be given to geographical areas with the highest maternal and infant mortality rates and those that are most economically depressed.
Art.	Local health solidarity funds shall be free to add health benefits required by the epidemiological analysis of the Provincial Health Directorate and local socio-economic analysis, within the framework determined by the National Health System, identifying additional sources of financing that do not include those allocated by this Law.
Art.	In municipalities whose operational capacity hinders or prevents the application of the provisions of this Law, it may be implemented through municipal consortia or associations.
Art.	The President of the Republic shall issue the regulations for this Law.

For this reason, the objectives of this law focus on providing better quality care to women during pregnancy. To achieve this objective, it focuses on the following aspects:(44,45)

- Prioritizing the reduction of maternal and infant mortality rates and obstetric risk, particularly in rural areas where this type of medical care is not available.
- Having the appropriate equipment to provide maternal and child care services, as well as constant support throughout pregnancy.

Conceptual framework

Postpartum hemorrhage: postpartum hemorrhage is defined as blood loss of between 500 ml after vaginal delivery and 1000 ml after cesarean delivery.(23)

Uterine atony: this occurs when the myometrium does not contract after delivery, causing abnormal blood loss at the level of the placental bed, which leads to hemorrhage.(24)

Uterine inversion: this can be seen as a complication of the immediate postpartum period, consisting of the approximation of the bottom of the uterine cavity through the vagina, causing postpartum hemorrhage of varying magnitude, requiring immediate treatment.(25)

Hypovolemic shock occurs when there is a circulatory deficiency accompanied by hypoxia, the use of anaerobic metabolism pathways, and acidosis, which can lead to abnormal metabolic actions.(26)

Prostaglandins are a group of lipid substances derived from fatty acids that contain a cyclopentane ring and constitute a family of cell mediators with diverse, often conflicting effects.(27)

Oxytocin: this can be defined as a hormone produced by the supraoptic and paraventricular nuclei of the hypothalamus, related to sexual patterns and maternal and paternal behavior, which also acts as a neurotransmitter in the brain.(6)

Uterotonics: these are drugs that are explicitly used to produce uterine contractions and can be administered prophylactically or therapeutically.(46)

Carbetocin: this is a drug that acts as a peripheral oxytocin receptor agonist, acting particularly on the myometrium.(47)

Fetal macrosomia: this is a high risk of maternal complications, fetal morbidity, and mortality. For this reason, early detection of macrosomic fetuses during pregnancy is critical.(28)

Placental accreta: this is a phenomenon characterized by the abnormal insertion of part or all of the placenta, with partial or total absence of the basal decidua.(48)

Placenta Percreta: the villi reach the peritoneal serosa and even penetrate the abdominal cavity, invading nearby organs.(29)

Arterial embolization: this is a procedure that prevents blood supply to abnormal tissue or a tumor. A small incision is made in the inner thigh, and a catheter is inserted and guided toward an artery near the abnormal tissue or tumor.(49)

Hypovolemia: decrease in volume in the extracellular space. Initially, this is compensated for by the release of potassium ions from the intracellular to the extracellular space.(26)

Fetal death: this refers to stillbirth, i.e., death before, during, or after pregnancy; in short, it is the loss of the pregnancy.(30)

Polyhydramnios: defined as an excessive accumulation of amniotic fluid, affecting between 1 and 2 % of pregnant women.(31)

Episiotomy: this consists of a vaginal perineal incision commonly performed in a mid-lateral or midline direction.(32)

Misoprostol: this medication is used to prevent gastric and duodenal ulcers by reducing stomach acid and helping to protect the stomach lining. It is also used to induce abortion with 85 % effectiveness.(33)

CONCLUSIONS

Postpartum hemorrhage (PPH) represents a critical challenge in obstetrics and is one of the leading causes of maternal mortality, both nationally and globally. Throughout this study, it has been demonstrated that, despite medical advances and the availability of clinical protocols, the prevention and timely management of PPH remain inadequate, primarily due to a lack of up-to-date knowledge and the suboptimal application of the Nursing Care Process (NCP) by healthcare personnel.

In this context, the role of nursing professionals assumes special significance, not only in identifying and responding to early signs of hemorrhage, but also in educating, preventing, and providing comprehensive follow-up care to patients throughout the perinatal process. Dorothea Orem's self-care theory reinforces this perspective, emphasizing the importance of empowering women to actively participate in their recovery, which complements the technical care provided.

In addition, the importance of implementing strategic interventions, conducting continuous clinical evaluations, and adopting a coordinated multidisciplinary approach has been highlighted, all within the current legal framework that ensures free and quality access to maternal health services in Ecuador.

Finally, this research seeks to contribute to the body of knowledge necessary to strengthen professional training in gynecological-obstetric nursing and promote best practices that reduce maternal morbidity and mortality due to PPH. The correct application of the EAP, supported by scientific evidence and clinical protocols, is a crucial tool for delivering effective, safe, and humane care, thereby fulfilling the ethical and professional commitment to protect the lives of mothers and newborns.

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