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Master's Thesis

NURSING PROCESS IN THE POSTPARTUM PERIOD AFTER DELIVERY BY CESAREAN SECTION

Master of Science in Nursing

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Abstract

In 2015, the World Health Organization (WHO) released a statement suggesting that national Cesarean section rates of not more than 19% were associated with lower maternal and neonatal mortality. At the same time, Cesarean section rates above a certain level have not been shown to provide additional benefits for the mother or the child; some studies have shown that a significant proportion of Cesarean sections in the total number of births may be associated with negative health outcomes for the mother and the child.

Purpose of our study was to provide scientific rationale for the principles guiding the organization of nursing process, as well as its goals and structure.

The results of the research study deepen the knowledge of the specific aspects of postoperative management after Cesarean section operation and the approaches of nursing personnel to organization of proper care for the puerpera. In course of the study, the investigator has defined the main objectives, the structure and the methods for implementation of the nursing process in postpartum management after Cesarean section, the typical problems in puerpera and the ways of their elimination.

The most valuable conclusions were made during investigation: the general goals of follow-up in the postoperative period are as follows: the fastest possible return of the puerpera to her normal life, the formation of exclusively breastfeeding skills; prevention of postpartum complications; maintaining the health of and preventing disease in the newborn. The authors have defined the nursing approaches to organization of proper care for the puerpera after the Cesarean section operation: ensuring proper puerperal regimen and diet, control of the general condition of puerpera, the condition of mammary glands, involution of the uterus, bowel and bladder habits. The following five constituents are integral to nursing process: nursing assessment (collection of information), determination of puerpera's problems, planning of nursing interventions, implementation of nursing interventions and evaluation of the efficacy of nursing interventions. Nursing process is a necessary condition to create a system of professional puerperal care.

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LIST OF ABBREVIATIONS

BP = blood pressure

USE = ultrasonography examination

WHO = World Health Organization

INTRODUCTION

The relevance of the study. The problem of female reproductive health is very current in modern Medicine [36]. The Cesarean section operation is one of the most widely discussed problems in Obstetrics [38]. Presently, as a result of changes in socio-economical conditions and the influence of a number of adverse environmental factors, the number of women with genital and extragenital problems (as well as later age primiparous women) has increased, causing a steady increase in the number of surgical deliveries [6].

Cesarean sections are performed in very variable baseline conditions in patients with obstetric problems (large fetus, premature birth, gestosis, postmaturity, breech presentation, long anhydrous period), extragenital disease (e.g. cardiovascular and endocrine disease) and obstetric situations (elective or emergency surgery), which largely determine the outcomes for the mother and the neonate [16].

In some cases, Cesarean section saves lives in situations where vaginal natural childbirth has serious potential complications. However, this operation, like any other surgical procedure, is associated with health risks in the mother and in the child. Therefore, in the absence of medical indications, such a risk becomes unreasonable. [12, 29]. In 2015, the World Health Organization (WHO) released a statement suggesting that national Cesarean section rates of not more than 19% were associated with lower maternal and neonatal mortality [25, 30]. At the same time, Cesarean section rates above a certain level have not been shown to provide additional benefits for the mother or the child; some studies have shown that a significant proportion of Cesarean sections in the total number of births may be associated with negative health outcomes for the mother and the child [39, 47]. A nationwide prospective study in Netherlands has shown that elective or emergency Cesarean delivery was associated with a five-fold increase in the risk of severe maternal illness [6]. Similar patterns have been found in population studies in other countries [7, 33].

Epidemiology. Taking into account the WHO recommendations, the rate of Cesarean section for medical reasons should not exceed 15% [14]. However, in

recent years, there has been an intensive increase in the rates of abdominal delivery worldwide. [6]. The WHO experts are concerned that increasingly more puerperas undergo surgical interventions in the absence of medical indications [23]. Cesarean section delivers approximately 20% of all newborns. If the trend continues, by 2030 this figure will increase to 30% [10]. For instance, in the UK, there has been a 20% increase in Cesarean sections over 30 years; in the US, a 12% increase over 15 years, and a 10% increase in Australia over 10 years [47]. Cesarean section rate in selected provinces of Italy is as high as 45 to 60%, and approximately 46% in China [12]. In Latin America, Cesarean section is used in 43% of births, and in five countries of the world, i.e. in the Dominican Republic, Brazil, Cyprus, Egypt and Turkey, the number of such surgical deliveries exceeds the rates of natural childbirth [6]. Each country has its own reasons behind such statistics: health care funding, cultural norms, the proportion of premature newborns, etc. [7]. The access of women to Cesarean section is far from equal in different countries; this, in the least developed countries of the world, only 8% of newborns are born this way, with only 5% in Sub-Saharan Africa [10].

Cesarean section is a complex surgery, where various complications are possible both intraoperatively and postoperatively [53]. Overall, approximately 21% of women have complications during and after the surgery [18]. Blood loss is the most frequent complication (8%); blood transfusion rate in this type of procedure is 4%. Gravidas with elective surgeries have a 16% complication rate compared to 24% in women with unexpected emergency procedures [18]. These differences are significant for intraoperative complications, in terms of blood loss and endometritis [51].

The work of a midwife calls for a clear understanding of the specific features of indications, contraindications, complications and rules for preparation to Cesarean section [42]. In order to prevent the complications of surgical delivery, the nursing staff should be aware of the symptoms and signs that suggest an unfavorable course of the postoperative period. [26]. The skills of a modern midwife should allow for correct assessment of general condition of a woman in labor, and for suspecting a deviation in a timely manner. It is important to have a correct understanding how to

purposefully effect the puerpera's body to help regain the health status temporarily disrupted by the surgical intervention [9]. This is why it is important to have up-to-date medical knowledge, and to possess the theoretical and practical skills in order to achieve maximum results in effectively returning women after Cesarean section to normal life [16].

The aim of the study

Based on global experience of postpartum management after Cesarean section delivery , to provide scientific rationale for the principles guiding the organization of nursing process, as well as its goals and structure.

Study objectives

1. To study the specific aspects of postoperative management after Cesarean section operation.

2. To determine the nursing approaches to organization of proper care for the puerpera after the Cesarean section operation.

3. To define the objective, the structure and the methods for implementation of the nursing process in postpartum management after Cesarean section delivery.

4. To determine the typical problems in puerpera after Cesarean section delivery and to suggest the ways to eliminate them.

The object of research

Provision of nursing care in the postpartum period after delivery by Cesarean section.

The subject of research

The factors that define the quality of nursing care in the postpartum period after delivery by Cesarean section.

The methods of study:

Epidemiological, statistical and clinical methods (observation, comparison and measurement).

The scientific and practical value of the study

The results of the research study deepen the knowledge of the specific aspects of postoperative management after Cesarean section operation and the approaches of nursing personnel to organization of proper care for the puerpera. In course of the study, the investigator has defined the main objectives, the structure and the methods for implementation of the nursing process in postpartum management after Cesarean section, the typical problems in puerpera and the ways of their elimination.

CHAPTER 1.
OPERATION OF CESAREAN SECTION: INDICATIONS, CONTRAINDICATIONS, SPECIFIC FEATURES OF PREPARATION AND MANAGEMENT OF THE POSTOPERATIVE PERIOD (REVIEW OF LITERATURE)

1.1. Indications, contraindications, advantages and disadvantages of the Cesarean section operation.

Cesarean section (Latin *caesarea* "kingly" and *sectio* "cut") is one of the obstetric options used in modern obstetric practice [23].

Elective Cesarean section is an operation where indications have been determined before the delivery. This category also includes Cesarean section on the patient's request. In elective Cesarean section, a horizontal incision is made [6].

Indications include [10]:

- Anatomically narrow pelvis of Stage II and Stage III;
- Placenta previa (the placenta is located above the cervix, blocking the maternal passages). Marginal placental presentation is another placenta-related indication;
- Mechanical obstacles that interfere with natural childbirth, for example, fibroids in the cervical region;
- Incompetent scar on the uterus (history of Cesarean section, myomectomy, perforation during abortion, etc.);
- Non-pregnancy related conditions where vaginal delivery poses a health risk to the mother (cardiovascular disease, renal disease; history of retinal detachment; pronounced varicose veins of the cervix, vagina and vulva);
- Complications of pregnancy that threaten the life of the mother during childbirth (severe preeclampsia, eclampsia);
- Fractures of pelvis and lumbar spine, history of;
- Breech presentation or transverse position of the fetus;

- Multiple pregnancy with breech presentation of the first fetus;
- Genital herpes in the III trimester of pregnancy (the child should avoid contact with the genital tract);
- HIV infection in the mother, in order to eliminate the risk of infecting the child due to microscopic injuries during the passage of the birth canal.

Emergency Cesarean section is a procedure performed when complications have arisen in course of natural labor and delivery, which endanger the health of the mother or the child. In an emergency Cesarean section, the incision is usually vertical [7]. Possible reasons [10]:

- Cephalopelvic disproportion (an inconsistency between the size of the pelvis and the size of the fetus, which was identified during childbirth);
- Poor uterine contraction strength or complete arrest of uterine contractions;
- Premature detachment of a normally located placenta (the supply of oxygen to the fetus is interrupted with a risk for potentially fatal bleeding);
- Prolapse of the umbilical cord;
- Threatening and beginning uterine rupture;
- Acute fetal hypoxia;
- State of agony or death of a mother in a viable fetus.

Absolute contraindications for Cesarean section operation included the following: [10]:

- Congenital malformations of the fetus, incompatible with life;
- Blood clotting disorder in the mother;
- Infectious lesions of abdominal skin;
- Non-viable premature fetus;
- Intrauterine fetal death (an exception includes fetal death as a result of complete rupture of the uterus).

Relative contraindications to the surgery include the following [10]***:***

- Acute bacterial and viral disease;
- Various inflammatory disease in connection with the risk for peritonitis, sepsis and maternal death;

- Prolonged time between membrane rupture and delivery;
- Duration of labor more than 14 hours;
- Immunodeficiencies.

The advantages of Cesarean section include [10]***:***

- Safe delivery in women with cephalopelvic disproportion;
- Avoiding potential birth trauma, which may threaten the health and the life of the child;
- The vagina is not stretched, there are no sutures after surgical interventions on the perineum (episiotomy, perineotomy), therefore, there less problems with sexual life;
- Avoidance of hemorrhoids and prolapse of the pelvic organs;
- No deformation of the child's head when passing through the birth canal;
- Avoidance of potential perineal ruptures;
- Avoiding potential displacement (skew) of pelvic bones and the sacrum;
- Avoidance of pain shock in case of low pain threshold in the puerpera;
- Avoidance of possible damage to the rectal sphincter, as well as to the anterior wall of the rectum (with a III and IV degree perineal rupture);
- Possible medical sterilization (tubal ligation as a method of safe contraception); indicated only in women older than 35 years of age having at least 2 children.

The disadvantages of Cesarean section include the following: [10]***:***

- Infection may potentially enter maternal abdominal cavity;
- Difficulties with starting breastfeeding (mainly in case of an emergency procedure);
- The likelihood of serious, including fatal complications in the mother is approximately 3 times higher than during childbirth through the natural birth canal;
- A scar on the uterus after a Cesarean section brings about the need to delay the next birth by a substantial amount of time (if such birth is planned).

1.2. The particulars of preparing a gravida to the Cesarean section operation.

In the abnormal pregnancy department, the gravida is prepared for the surgery with additional required tests and observations of maternal and fetal health status. As required, the healthcare team may use pharmacological correction of any health status deviations detected both in the mother and in the fetus [36].

Before the operation, the anesthesiologist discusses appropriate anesthesia with the patient, taking medical indications and contraindications into account [10].

The midwife should explain preoperative diet to the patient. The meal before the operation should be light. During lunch, it is better to have a first course only. At 18 hours, the patient may have a glass of milk or tea. Starting after 18:00 the evening before and in the morning on the day of surgery, the patient should be on a "Nothing Per Os" (NPO) regimen to ensure safe anesthesia during the surgical procedure [43].

The evening before surgery the gravida should have a hygienic shower. It is important to get a good night's sleep in order to be able cope with the understandable anxiety. A cleansing enema may be done at 6.00 in the morning. In the morning on the day of surgery, the scrub nurse shall notify the midwife the time when the patient will need to be taken to the operating room. Immediately before the surgery, a catheter is introduced into the urinary bladder by a midwife; the catheter is removed only a few hours after the procedure. These measures will allow managing and preventing serious kidney-related complications [37].

1.3. The method of performing the Cesarean section operation.

Cesarean section is usually (in up to 95% of the cases) performed under conduction (spinal or epidural) anesthesia. Only the lower part of the body is anesthetized; immediately after the child is removed from the uterus, the mother can take the newborn in her hands and put him or her to her breasts. In the case of an emergency caesarean section, it is sometimes necessary to resort to combined general anesthesia (endotracheal anesthesia) [10].

Before the operation, hair is removed from the surgical site and a catheter is inserted into the bladder. An empty urinary bladder will not put pressure on the

uterus, which will contribute to better uterine contraction in the postpartum period. Also, the likelihood of damage to the urinary bladder will be lower [37]. After the anesthesia, the woman is placed on the operating table and the upper part of the body is fenced off using a screen. The surgeon makes a horizontal incision in the anterior abdominal wall above the pubis; in emergency cases, a vertical incision is made from the navel to the pubis in order to remove the child as quickly as possible. If there is a scar from previous pregnancies that ended in a caesarean section, a new incision is made in the same place, the old scar on the skin is first excised. Then the surgeon pushes the muscles apart, moves the urinary bladder aside, makes an incision on the uterus and opens the amniotic sac. The doctor removes the child and cuts the umbilical cord, after which the placenta is manually removed. The surgeon shows the child to the mother immediately after the child is removed from the uterus. The incision on the uterus is sutured, the abdominal wall is repaired, and sutures or staples are applied to the skin. The total duration of the operation is 20-40 minutes. If a drain was left in place in the muscle tissue of the abdomen, the drain is removed in 2-3 days after the operation; sutures/staples are removed from the skin in 5-6 days [12].

1.5. The specific aspects of postoperative management after Cesarean section operation.

The management of puerperas after the Cesarean section operation has its distinctive specific aspects. The most important of these are as follows [4]:

- Early transfer from the critical care unit to the postpartum unit;
- Early ambulation;
- Refraining from the use of drug products with lack of evidence-based efficacy;
- Adequate anesthesia;
- Prevention of postoperative complications;
- Adequate postoperative examination and observation;
- Early discharge.

• ***Early transfer from the critical care unit to the postpartum unit*** is performed in 6-8 hours after surgery performed under neuraxial (spinal, epidural, combined spinal-epidural) anesthesia, or in 8-12 hours after surgery performed under general anesthesia [19]. Exceptions include the following: preeclampsia; bleeding before or during surgery, or in the early postoperative period; severe somatic disease requiring monitoring of hemodynamic indices and the functions of vital organs, as well as the supervision of an anesthesiologist; technical difficulties during the procedure; the need to expand the surgical procedure (myomectomy, hysterectomy, the need to remove adhesions, etc.) [44]. Removal of the urinary catheter should be performed after the patient began ambulating and not earlier than 4-6 hours after injection of the last dose of anesthetic into the epidural space [37].

• ***Early ambulation.*** Early ambulation of the patient is an important issue in the management of the postoperative period. The essence of early ambulation is that in 4-6 hours after the end of the surgical procedure the woman is assisted to sit up in her bed, then to lower her feet to the floor and then to start walking gradually [3]. This minimizes the risks of developing adhesions in the abdominal cavity, pulmonary congestion in the lungs (which is especially likely after general anesthesia), as well as thromboembolic complications during prolonged immobilization [32].

Contraindications to early ambulation include the following [22]:

- body temperature above 38°C;
- thrombophlebitis in the lower extremities;
- bleeding;
- pronounced pain syndrome.

• ***Refraining from the use of drug products with lack of evidence-based efficacy.*** Drugs with undesirable side effects (metoclopramide, drotaverine), and with lack of evidence-based benefits are not prescribed. In puerperas who underwent a Cesarean section under neuraxial anesthesia, intestinal stimulation with neostigmine is carried out only as indicated (i.e. in intestinal paresis). The puerperas who have had a Cesarean section under general anesthesia may have intestinal stimulation with neostigmine according to the scheme generally accepted in surgery (neostigmine 1.0 subcutaneously, followed by a cleansing enema in 30 minutes) [22]. As uterotonic

therapy, methylergometrine is used only when absolutely indicated (i.e. in early and late postoperative bleeding). In other cases, oxytocin is a drug of choice, with predominantly intravenous drip administration (5 units in 400 mL of normal saline) twice a day for 2 days [52]. An ice load in the early postoperative period should not be used, since the benefits of this intervention are doubtful from the standpoint of evidence-based medicine [9].

- ***Adequate postoperative pain control.***

All patients (when not contraindicated) may receive the following [8]:

- intravenous paracetamol infusion at the end of the surgery or at the beginning of the early postoperative period. Traditional nonsteroidal anti-inflammatory drugs are an alternative to reduce opioid use.
- continuation of epidural analgesia with local anesthetics.
- stronger opioids may need to be added in a pronounced pain syndrome (as an IV infusion).
- moderate intensity pain may require weaker opioids.

- ***Prevention of postoperative complications.*** The main complications in the postoperative period include bleeding, pyoinflammatory and thromboembolic complications [32, 51].

In order to prevent thromboembolic complications, all women should undergo a documented assessment of risk factors for venous thromboembolism in early pregnancy or before pregnancy; when hospitalized for any reason; and again immediately before and after the surgical operation [32].

Low molecular weight heparins are the drugs of choice for postoperative thromboprophylaxis. They are safe in breastfeeding women and their children. In all cases (when not contraindicated), elastic or pneumatic compression of the lower extremities should be used [18]. Low molecular weight heparins should be avoided in women at high risk for bleeding. The risk factors for bleeding when low molecular weight heparins are used include the following [32]:

- Women with an increased risk of bleeding (e.g., in placenta previa);
- Women with prenatal or massive postpartum bleeding;
- Women with thrombocytopenia (platelet count less than 75×10^9);

- Women with hemorrhagic diseases (von Willebrand disease, hemophilia or acquired coagulopathy);
- Severe kidney disease (glomerular filtration rate less than 30 ml / min);
- Acute stroke within the last 4 weeks (ischemic or hemorrhagic stroke);
- Severe liver disease;
- Uncontrolled hypertension (blood pressure above 200 mm Hg systolic or above 120 mm Hg diastolic).

- ***Adequate postoperative examination and observation.*** After the Cesarean section operation and before discharge, it is necessary to use watchful waiting for early detection of postoperative complications [18].

The examination includes the following:

- Monitor-based control for 2 hours (electrocardiography, non-invasive measurement of blood pressure and pulse oximetry);
- Assessment of pain intensity;
- Measurement of BP and pulse rate and assessment of skin;
- Assessment of intestinal peristalsis;
- Determination of the state of the mammary glands (the expected outcome is the absence of nipple cracks with signs of suppuration and lactostasis);
- External examination to determine the size, the consistency and the tenderness of the uterus;
- Evaluation of the amount and the nature of lochia, and whether they correspond to the time of uterine involution;
- Assessment of the postoperative suture (for signs of inflammation, edema, infiltration and dehiscence);
- Palpation of the veins in the lower extremities.

The frequency of obstetrical examination is typically as follows: immediately after the Cesarean section operation; every 20-30 minutes after surgery for 2 hours; then every 2-3 hours after 2 hours postoperatively up to 6 hours; after transfer to a postpartum unit; once a day in the postpartum unit; whenever the patient has any complaints and/or hyperthermia and profuse sanguineous discharge [36].

Clinical and laboratory tests after a Cesarean section operation are very important. The following assessments should be performed after a surgical delivery [18]:

- complete blood count (on Day 3);
- coagulogram (on Day 3 only in patients with moderate to high risk for thromboembolic complications);
- ultrasonography (on Day 3-4 after surgery);
- consultations by related specialists: internists, surgeons, neurologists (only when indicated).

Vaginal examination is performed only as indicated. When complications develop, the plan of assessment may change [36]. Ultrasonography (ultrasound)is an effective, safe and non-invasive method for assessing the condition of the uterus in the postpartum period. However, many authors are guided in their work not by the results of ultrasound examination, but rather by clinical assessments and laboratory results. [48]. Ultrasonography should be performed on Day 3-4, in a patient with a moderately full urinary bladder. When the width of the uterus is measured, the maximum permissible dilatation in the upper third and in the middle third is 1.5 cm and 1.8 cm in the lower third [2].

Whatever the width may be, no residual placental tissue should be visualized in the uterine cavity. Such tissue is detected as a highly echoic mass with a rounded spongy structure and with the presence of vascularization zones. Residual shedding decidual tissue may be normally visualized; the interpretation of the results depends on the number of tissue fragments. The presence of gas (hyperechoic inclusions) in the uterine cavity is acceptable; however, the interpretation of the results depends on clinical and laboratory data [48].

During assessment of the uterine suture and the suture on the anterior abdominal wall, no infiltrates should be visualized. When abnormal masses are present, the report should include a clear description of their sizes and locations; in large (over 5 cm) masses, the interpretation of results depends on the clinical presentation and laboratory results, as well as on the changes in ultrasonographic findings with time. When hyperechoic lesions are present in the area of the suture,

the surgeons should be asked if they used any hemostatic sponges. When parametrium is assessed, attention should be paid to the presence of absence of masses (including those with retroperitoneal location) and hematomas. Also, the amount of free fluid in pelvic cavity and in abdominal cavity is assessed [48].

Sometimes there are indications to transfer the patient to the observation unit. Criteria for the transfer of a puerpera to the observation unit [51]:

- endometritis;
- wound infection;
- thrombophlebitis;
- fever over 38 ºC, measured 3 times with hourly intervals.

Body temperature of up to 38 ºC and leukocytosis are acceptable within 24 hours after a Cesarean section. The most frequent cause is dehydration, therefore the approach to management should include plenty of oral fluids and infusion therapy (as indicated) [31]. The use of anti-inflammatory therapy is not indicated in this setting. If the patient has a low-grade fever in the postpartum period (up to 37.5 ºC for more than 24 hours and already on Day 2 of the postpartum period and provided there are no clinical signs of endometritis), the maternity hospital team should do the following [34]:

• monitor body temperature every 3 hours and record the temperature in the labor and delivery record;

• perform a culture and sensitivity sampling from the uterine cavity;

• perform a differential diagnosis with other possible causes of increased body temperature.

The puerpera after a Cesarean section operation may be discharged when the following criteria are met:

- early discharge (in 4-5 days) is preferable in the absence of hyperthermia and with an uneventful postoperative period;
- the size of the uterus is consistent with normal involution times as confirmed by gynecological examination and ultrasound;
- the absence of nipple cracks with signs of suppuration and lactostasis;

- the suture site is free from inflammation; the discharge is possible with a non-absorbable suture material in place, with subsequent removal of the suture threads in a doctor's office near the place of residence;
- absence of hyperthermia (above 37.2 ºC);

The blood counts and the WBC differential should be within normal ranges. At discharge, all women should receive postpartum counseling.

- ***Early discharge of the puerperal and newborn.*** Modern perinatal technologies involve early discharge of a mother with a newborn from a maternity hospital [18]. In various countries, the terms for the discharge of a puerperal woman and a newborn vary from 4 days (in the US) to 7 days (in Germany and Italy) [6]. The aim of early discharge is to prevent infections in puerperas and neonates [51].

Before the discharge of the puerperal woman from the hospital, it is necessary to assess the condition of her mammary glands, the degree of involution of the uterus and whether there is any uterine pain/tenderness, to assess the nature of the lochia, the condition of the sutures and the postoperative wound [2, 11,17]. A need for vaginal examination may arise. When performing a speculum examination of the cervix, a PAP smear should be taken. During a bimanual vaginal examination in the postpartum period, it is often possible to determine a slight backward deviation of the uterus, which resolves with time without treatment [18]. Soft tissues of the thighs and ankles should be palpated to rule out deep vein thrombophlebitis [32]. A complete blood count and a urinalysis should be performed [22].

The physician should make sure the puerpera has normal bowel movements and urination, and also inform her that lochia will outflow for three to five weeks [41]. On the eve of discharge, it is necessary to have a conversation about the features of the regimen to be followed in the home [44].

At home, a woman should observe the same rules of personal and general hygiene as in a maternity hospital. She should be advised to reduce the amount of usual physical activity, to have daytime rest for approximately two hours and to make sure to have walks in the open air [19]. Regular and balanced nutrition is an important condition for the successful course of the puerperal period [43]. The

timings of the return to a normal lifestyle, normal activities of daily living and return to work are determined individually [19].

During a doctor visit, it is also necessary to choose a method of contraception, and to diagnose such frequently possible complications of childbirth as back pain and postpartum depression [20]. A trusting relationship between the patient and medical staff contributes to the preservation of a woman's reproductive health for many years. [44].

CHAPTER 2.
NURSING APPROACHES TO ORGANIZATION OF PROPER CARE FOR THE PUERPERA AFTER THE CESAREAN SECTION OPERATION

2.1. The general goals of observation in the postoperative period, the specific features of puerperal regimen and diet.

The general goals of observation in the postoperative period include the following [18]:

- the fastest possible return of the puerperal woman to her normal life, the formation of breastfeeding skills;
- prevention of postpartum complications;
- maintaining the health and preventing disease of the newborn.

After a Cesarean section operation, the puerpera is transported on a gurney and transferred to a bed (preferably a functional bed) into a supine position. During the first day after the operation, the puerperal woman is observed in the postoperative ward (intensive care ward). Her health is continuously monitored by an anesthesiologist and a midwife. During this time, the woman is adjusting to her postoperative reality; blood loss is replenished and antibiotic therapy is started to prevent postoperative infectious complications. [51, 52].

The transfer from the intensive care ward to the postpartum unit is performed in 6-8 hours after the surgery performed under neuraxial anesthesia or in 8-12 hours after the surgery performed under general anesthesia [18].

The regimen. On the first day, the woman is mostly in bed; she is sleeping a lot due to the after-effects of anesthesia and the administration of analgesics [24]. The head must be positioned in such a way that the root of the tongue does not sink, and that in case of vomiting, the vomit does not get into the respiratory tract. It is necessary to cover the woman well and to warm her (hot-water bottles may be used for arms and legs as necessary) [35]. In the light of active management of postoperative patients, in 6 hours the woman is allowed to turn on her side [19]. By

the end of the first day, she may need to sit up in her bed, stand a little and walk a little near her bed (with assistance). By Day 2-3, the woman should be walking; first under the midwife's supervision, then independently. In the following days, she will need to follow a general regimen [44]. Recommended activities include breathing exercises. The care for the postoperative puerperal patient is informed by the same rules as for the rest of the puerperas, but with postoperative handling of sutures on the abdominal wall according to general surgical principles [5].

The midwife is providing the required intensive care for the puerpera on the first day. Starting with Day 3-4, an otherwise healthy woman should perform self-care. On Day 1-2, the care for the newborn is also provided by the midwife. Starting with Day 3, the mother should attempt to do it herself [45]. The midwife should take into account that the patient is both a postoperative patient and a puerpera; this is why the woman needs additional support and assistance [21]. The care and the physician's orders are carried out in order to prevent complications [18].

Diet. On the first day, diet "0" is used. Postpartum women who underwent Cesarean section operation under neuraxial anesthesia are allowed to take fluids immediately after the end of the operation [43]. Starting from the first hour after the operation, they may receive general-type hospital food, with the exception of bread, vegetables and fruits. Postpartum women who underwent Cesarean section operation under general anesthesia are allowed to take fluids in 2 hours after the end of the operation [34]. In this category of puerpera, enteral feeding can be started in 4-6 hours postoperatively (a broth); general-type hospital food can be started in 24 hours [43].

In order to prevent intestinal paresis, early ambulation and a complex of physiotherapeutic exercises are recommended. In the absence of an effect, the physician may order administration of 10% sodium chloride solution and 0.05% neostigmine, followed by a hypertonic enema [19].

Breastfeeding dictates certain dietary restrictions [46]. It should be remembered that the composition of breast milk deteriorates if a nursing mother overloads her food with carbohydrates. At the same time, the amount of protein in milk decreases. It is necessary to avoid using obligate allergens, such as cocoa, nuts,

honey, chocolate, coffee, citrus fruits, mushrooms, strawberries and seafood, since they may cause adverse reactions in a child. The nursing mother should avoid canned food, as well as spicy and strong-smelling foods (garlic, pepper, onion), which can give milk a specific flavor [27]. It is strictly forbidden to take alcohol and tobacco, since alcohol and nicotine easily penetrate into breast milk, which can cause serious disorders in the child's central nervous system, up to mental retardation [46].

2.2. Control of the general condition of puerpera, the condition of mammary glands, involution of the uterus, bowel and bladder habits; the hygiene of the puerpera after the Cesarean section operation.

On a daily basis, a doctor and a midwife monitor their puerperas. The neonatologist conducts a daily examination of the newborn. The judgment of the general condition of the puerpera can be informed by her body temperature and pulse. Measurement of body temperature and counting of the pulse are usually performed twice a day (at 6-7 o'clock in the morning and at 6-7 o'clock in the evening). Particular attention is paid to the pulse characteristics and blood pressure measurements [46]. The presence of normal body temperature and a calm rhythmic pulse of good filling is a sign of normal course of the postoperative period. An increase in body temperature and an increase in heart rate for 1-2 days are likely symptoms of an infection. In these cases, it is necessary to contact a doctor [51].

The degree of uterine contraction and, consequently, its involution can be assessed on the basis of measurements of the height of the uterine fundus above the pubic arch after preliminary emptying of the bladder [2].

In order to judge on the course of the postpartum period, it is necessary to pay attention to the nature of the discharge (i.e. sanguineous, with clots, serous, purulent, etc.) and its odor [41]. In the first 6-8 days after the Cesarean section, the total amount of discharge is 800-1000 g. By the end of the 2nd week, the discharge is usually scanty and mucous; by the 5-6th week, it disappears completely [11]. When copious bright-red lochia are discharged on Day 4-5 postoperatively, poor uterine contraction should be suspected. In the event of discharge with a fetid odor and fever,

the nurse should urgently call a doctor and, before the doctor comes, provide the puerpera with a calm environment [51]. An icepack may need be placed on the area where the uterus is located. Lochia swabs are taken in all puerperas on the 4-5th day to screen for gonococcus. As a rule, two swabs are taken [17].

Sometimes, the discharge is retained in the uterine cavity (this condition is referred to as lochiometra) [11]. In this case, a large flaccid uterus is detected on palpation, and there is very little discharge. Since the development of lochiometra may be triggered by a distention of urinary bladder or intestines and/or uterine version. the nurse should constantly monitor voiding and bowel movements [17]. In order to obtain an accurate idea of the true rate of uterine involution, it is recommended to perform an ultrasound examination of the uterus on Day 2–3. This method allows for an assessment of the amount and the structure of the lochia retained in the uterus [48]. Retention of a substantial amount of lochia in the uterus may necessitate its surgical emptying (vacuum aspiration, careful curettage and hysteroscopy) [11].

Nursing personnel should assess the status of mammary glands, their shape, the status of nipples, the presence of cracks and abrasions (after feeding the child), as well as the presence of engorgement [27]. Daily inspection includes the external genitalia, the perineum, and the postoperative wound area [5].

It is very important to control bowel and bladder habits. In case of urinary retention, the nurse should try to trigger it via a reflex (open a tap with water, pour warm water on the urethra, put a warm heating pad on the pubic area) [37]. When such interventions produce no result, possible interventions may include intramuscular injections of 1 ml oxytocin 2 times a day, intramuscular injections of 10% magnesium sulphate 10 ml as a single dose and catheterization of the urinary bladder. If recatheterization is necessary, a Foley catheter should be used for a day. When the patient does not have independent bowel movements, a laxative or a cleansing enema should be used on the third day [18].

Hygiene of the puerpera. The puerpera should not touch her genitals or postoperative wound with her hands. She should wash her face and hands with soap

before every child feeding and meal, as well as every morning. Bedclothes and underwear should be clean [35].

The discharge that flows out from the uterine cavity (lochia), which contains a large number of microbes, not only contaminates the genitals and irritates the skin. It may also contribute to the penetration of pathogens into the birth canal and to the development of postpartum infection [51]. Therefore, as part of the measures to ensure an uneventful postpartum period, keeping the external genitals clean is essential; this is achieved by the daily toilet of the puerpera [18]. In normal course of the postpartum period, puerperas have intimate washes with weak disinfectant solutions at least 2 times a day (in the morning and in the evening) [51].

The usual agent for washing the external genitals is a 0.5% ammonia solution, which does not irritate the skin, and easily washes off dried discharge and blood from the skin. In presence of purulent discharge and wounds with purulent plaques on the perineum, antibacterial solutions are used. In presence of a discharge with a fetid odor, a solution of potassium permanganate (1:5000) is used. When the skin of the external genitals and inner surfaces of the thighs is significantly irritated, the washing can be performed with a chamomile infusion [18].

The care for the healthy puerpera is inseparable from the care for her newborn; the latter is carried out in accordance with modern perinatal technologies. They are based on the joint stay of the puerpera and the newborn, which ensures that the newborn is exclusively breastfed. Modern perinatal technologies include an action plan based on traditional, universally accepted methods of care for healthy children [18].

In the postpartum period after a Cesarean section operation, the strictest cleanliness of the wards, bedding, linen, vessels and other care items is of particular importance. All instruments and material that comes into contact with the genitals and nipples must be sterile. The health care personnel taking care of puerperas should strictly adhere to all the applicable aseptic and antiseptic precautions and rules of personal hygiene [51]. After cleaning, the walls are irradiated with UV lamps. Beds are washed and disinfected. Soft inventory (mattresses, pillows, blankets, etc.) is treated in a disinfection chamber [18].

The joint stay of mother and child significantly reduces the risk of postpartum complications in puerperas and newborns [51]. This is due to the fact that the mother is taking care of the child on her own, limiting the exposure of the newborn to the personnel of the maternity ward, and thereby reducing the risk of infection with hospital strains of opportunistic microorganisms. On the first day, her care of the newborn is assisted by the maternity ward nurse [13]. She teaches the mother the proper sequence of cleaning the skin and the mucous membranes of the child (eyes, nasal passages, body washing), teaches the use of sterile materials and disinfectants, as well as feeding and swaddling skills [18].

In the postoperative period, the midwife or the nurse explains the importance of avoiding physical stress, genital intercourse and sources of infections during the first two months. The nursing and midwifery personnel also conducts group patient education lessons on topics such as „Hygiene of the postpartum period", "Principles of breastfeeding", "Prevention of mastitis", "Care of newborn children", etc. [18].

2.3. Prevention of postoperative complications.

In order to prevent postoperative infectious complications, it is best to begin antibiotic therapy during surgery and continue it in the postoperative period. The selection of the antibiotic and the duration of the course is determined by the physician. The most frequently prescribed agents include third-fourth generation cephalosporins and broad-spectrum drugs. To prevent the development of anaerobic infection, metronidazole is administered intravenously. The rest of the preventive measures include aseptic and antiseptic precautions used in the operating room, in the postoperative recovery room and in the postpartum ward [51].

In order to prevent postoperative complications, the midwife is performing daily processing of the postoperative wound area. The site of the postoperative suture is closed by a sterile napkin, which is changed on a daily basis. The seams are treated with hydrogen peroxide, dried and then treated with a 5% solution of potassium permanganate. In case of high risk, the midwife conducts a more intensive treatment, including irradiation of the surgical wound with ultraviolet rays [5].

In order to prevent bleeding, oxytocin is usually prescribed at 1 ml (5 IUs) 2 times a day for 5 days. Other contraction-inducing agents may be used as well. The nurse or the midwife should explain to the postpartum woman that early ambulation and breastfeeding accelerate uterine involution [2].

In order to prevent pain, the drugs administered intraoperatively continue to exert effect in the first postoperative hours. Then, as ordered by the physician, the midwife administers the analgesics that have been prescribed. Opioid analgesics are usually prescribed for no longer than 3 days: not more than 3 doses on the first day, and not more than 2 doses on the second and the third day [8].

Given the many risk factors for thromboembolic disorders, the midwife monitors clotting factors and the state of the vessels of the lower extremities. In case of an elevated risk, anticoagulant therapy is used as prescribed by the physician [32].

In order to prevent postoperative fusions, electrotherapy can be used starting from Day 3: ultrasound therapy in the postoperative wound area and/or electrophoresis with dissolving and anti-inflammatory drugs [18].

2.4. Organization of breastfeeding after the Cesarean section operation.

The basis of modern perinatal technologies is breastfeeding exclusively. In order to ensure it, the following is required [46]:

1. Early breastfeeding attachment after birth;
2. Joint stay of mother and child;
3. Excluding all types of oral fluid and food except breast milk;
4. The need to avoid the use of pacifiers that weaken the oral motility of the newborn;
5. Breastfeeding on demand, with no nighttime intervals;
6. Discharging from the maternity ward as early as possible.

Joint stay is required to limit the contacts of the newborn with other children, and to make on demand breastfeeding possible, which prevents giving additional water to newborns [35]. An equally important result of joint stay is the formation of a

common mother-child microbiome and the acquisition of the skills of newborn care by the puerpera under the guidance of nursing personnel [18].

In order to preserve the normal functioning of the mammary glands, to ensure natural feeding of the infant and to prevent cracked nipples and lactational mastitis, it is necessary to organize proper care for the mammary glands [27]. By the time the puerperas are transferred to the postpartum unit, it is necessary to examine their mammary glands and pay attention to the shape of the nipples [46]. The areolas and the nipples of the mammary glands should be washed with normal saline using sterile cotton balls, dried and moistened with 70° alcohol [18]. Then the puerperas will need to put on clean, freshly ironed linen, which should support the mammary glands in an elevated position without squeezing them [27].

Before feeding the baby, the puerpera should wash her hands with soap and dry them with a towel. Using a cotton ball, the nipple and the areola should be washed with a disinfectant solution that is harmless to the child (e.g., 0.05% gramicidin solution, 1:5000 potassium permanganate solution, 2% boric acid solution, etc.) [46].

The puerpera should be taught how to breastfeed properly; the nurse or midwife should help attach the infant to the mammary gland for the first time. During the first days, the puerpera shall breastfeed the child in a lying position. Beginning with Day 4 postpartum, the puerpera shall breastfeed the child in a sitting position; on Day 4-5 she may breastfeed while sitting on a chair with back support [27]. She should express a few drops of milk before inserting her nipple into the baby's mouth. With their mouth, the child should grab not only the nipple, but also a significant portion of the areola. To prevent disrupted breathing during suction, the mother should pull away her breast from the baby’s nose using her thumb. After breastfeeding, the nipple should be removed carefully from the baby’s mouth. The child should be fed for not longer than 15 minutes. It is necessary to alternate breasts during the feeding. After the feeding, the nipple should be dried and washed again with boric acid solution as necessary. If there is a need to express milk (sudden engorgement, milk stasis), then it is better to do this using a breast pump [18].

A large role in the formation of breastfeeding skills and successful subsequent lactation belongs to the nursing and midwifery staff. In a nutshell, their tasks are the following [27]:

- participation, jointly with the physician, in preparation for breastfeeding (explaining its benefits, educating about the breastfeeding technique and the mechanisms of lactation, and discussing any questions the patient may have);

- assisting with the first attachment of a newborn to the mammary gland;

- observation, communication, psychological and emotional support to the woman;

- in the early stages of breastfeeding, when the mother has difficulties, providing practical assistance, encouraging feeding on demand, helping the mother grasp the fact that she has enough breast milk for successful breastfeeding.

Absolute contraindications to breastfeeding are as follows [46]:

- breast cancer;
- use of alcohol and narcotics;
- leukemia;
- taking chemotherapeutic agents for cancer treatment;
- HIV infection;
- active pulmonary tuberculosis;
- herpetic rash on the nipples;
- galactosemia in the child.

CHAPTER 3.
NURSING PROCESS IN THE POSTPARTUM PERIOD AFTER DELIVERY BY CESAREAN SECTION

3.1. Definition, objectives and structure of the nursing process in the postpartum period after delivery by Cesarean section.

Nursing process is a scientific method for organization and delivery of nursing care and completion of a puerpera care plan guided by the current situation of the puerpera and the nurse/midwife. The care plan is made by the nursing and midwifery staff in a mutual agreement with the patient; the objective of the plan is meet the needs/problems of the patient [35].

The objective of the nursing process is to maintain and restore the autonomy of the puerpera in meeting the basic needs of her body in the postpartum period after a Cesarean section operation [45]. Nursing process is a necessary condition to create a system of professional puerperal care [21].

Nursing process includes the following five components [35]:

1) Nursing assessment (collection of information);
2) Determination of puerpera's problems;
3) Planning of nursing interventions;
4) Implementation of nursing interventions;
5) Evaluation of the efficacy of nursing interventions.

3.2. Nursing assessment (collection of information).

In order to obtain unbiased and complete information when communicating with the puerpera, the nurse should adhere to the following principles [28, 40]:

1) the patient should feel reassured that healthcare team is genuinely concerned about their problems;

2) the nurse should have a kind attitude towards the puerpera and use active listening;

3) the nurse should prepare his/her questions in advance, preferably in writing; this will facilitate communication;

4) during the conversation, the nurse will need to keep records in order not to forget any important information.

The interview with the puerpera should follow a pre-defined plan [49]:

1. Demographic data.
2. History of disease in childhood and in adulthood, their course and treatment.
3. Family history.
4. Working and housing conditions.
5. Epidemiological history.
6. Allergy history.
7. Obstetric and gynecological history:

- menstrual function (menarche and the establishment of the menstrual cycle, duration, pain [if any] and regularity of menstruation, the amount of blood lost during menstruation, the date of the last menstruation);
- sexual life (from what age, married or single);
- gynecological diseases (which, when; the duration and nature of their course, the therapy conducted and therapeutic outcomes);
- reproductive function: the number of previous pregnancies with details of their course and outcome (artificial and spontaneous abortions, childbirths);
- the course of present pregnancy (the first and the second half of pregnancy, previous diseases and their treatment, outpatient/inpatient treatment).

When examining the puerpera, the nurse is paying attention to the following considerations [26]:

– ***general health of a healthy puerpera:*** normally, it should be satisfactory;

– ***complaints***: a healthy puerpera should not have any complications, but some complaints and problems are quite expected; for instance, fatigues, minor pains due to uterine contraction, lochia, pain in the area of the postoperative suture, breast engorgement;

– ***bowel and bladder habits*** (urination and bowel movements, which should be spontaneous and normal);

– ***skin*** (should be clean and of natural coloration; pallor may suggest anemia, hyperemia may suggest inflammation);

– ***vital signs, i.e. pulse rate, blood pressure and body temperature*** (measured in the morning and in the evening; the findings in a healthy puerpera should be within normal range);

– ***in palpation of the uterus***, the investigators note the height of the fundus; normally, there should be no tenderness, the abdomen should also be painless on palpation;

– ***when examining mammary glands***, attention is paid to engorgement (moderate engorgement may be seen starting from Day 3, but after the feeding, the mammary glands should be soft), to tenderness (an abnormal sign), to the condition of the nipples (they should not be cracked), to the level of lactation and to any problems with feeding the child;

– ***examination of the postoperative wound*** allows detecting the presence of discharge, suture line disruption and skin color changes.

– ***lochia*** are reviewed on the linen/pad; the puerpera should be asked about the amount and the nature of her discharge during the day.

3.3. Determination of puerpera's problems.

At this step, the nurse/midwife identifies the physiological, psychological and social problems of the puerpera (actual and potential problems, with identification of higher priority problems), and makes a nursing diagnosis [1].

The plan for assessment of problems of the puerpera includes the following [50]:

1) determination of actual (currently present) and potential problems;

2) identification of the factors, which have caused the actual problems or are contributing to emergence of potential problems;

3) identification of high-priority problems in the puerpera;

4) identification of puerpera's strengths, which may help in management of current problems and in prevention of potential problems.

The most important problems are as follows [1]:

Pain in the postoperative wound area may bother the puerpera in case of an insufficient and inadequate pain control. The pain may be permanent or intermittent [8].

The problem of unrestricted urination. The inability to void arises due to the fact that the puerpera remains in a horizontal position and is afraid of pain; due to compression, the urinary bladder may become hypotonic [37]. The presence of sutures further complicates the situation.

Lack of bowel movements. For the first three days, the puerpera may have no bowel movements; if bowel movements are absent any further, this already constitutes a nursing problem. The nurse shall attempt to empty the intestines using a cleansing enema or a laxative as ordered [18].

Change in the nature and amount of lochia. An important criterion of adequate course of postpartum period is the nature and amount of lochia [41]. In case of profuse bloody discharge with blood clots, the nurse shall inform the physician, and, before the physician comes, the nurse shall take vital signs, conduct an external massage of the uterus, put an ice pack on the lower abdomen, and prepare for the administration of contraction stimulants (i.e. oxytocin, methylergometrine). The nurse (midwife) is often the first personnel to notice a foul odor of vaginal discharge; this shall be reported to the physician [11].

Psychological problems in women after a Cesarean section. Immediately after the birth of a child, a woman usually feels joyful and happy. However, this mood can be reversed. This condition has been referred to as "postpartum depression"; the terms "maternal melancholy" and "postnatal sadness" are less known [20]. The symptoms of this complication include the following: a feeling of anxiety and depression, frequent mood swings, headache, fatigue, and a tendency to unmotivated tears and equally inexplicable laughter. These may be common postpartum symptoms of complications associated with the normalization of hormonal levels and homeostasis [44].

Knowledge deficit and lack of practical skills in newborn care, feeding, breast care and postpartum hygiene. Quite often, puerperas, especially primiparas, lack sufficient knowledge about the course of the postpartum period, the organization of breastfeeding, self-care hygiene and child hygiene, which complicates their adjustment to the new role [18].

Feeding the newborn and the problem of the mammary glands condition. The root of the problem is the lack of puerperal awareness and knowledge deficit regarding breastfeeding. Quite often, the course of postpartum period may be complicated by engorgement of mammary glands, lactostasis and nipple cracks, which makes feeding the child more difficult [46].

The following impaired needs may be seen in a puerpera [36]:

1) impaired need for movement due to pain and the presence of a postoperative wound;

2) impaired patient need to maintain normal body temperature: body temperature may be elevated as a result of inflammation;

3) self-care deficits in the puerpera due to pain, the presence of postoperative wound, dizziness and feeling unwell due to blood loss.

4) impaired need for bladder and bowel habits in the puerpera due to difficulties with urination and bowel movements.

5) impaired need for sleep due to anxiety and the need to breastfeed the child at nighttime.

After the nurse has identified the problems in the patient, he/she will need to prioritize them [50].

The next step is to make a nursing diagnosis. The objective of nursing diagnosis is not to diagnose the disease, but rather to identify the patient's responses to their disease. Nursing diagnosis (unlike the physician's diagnosis) is constantly changing depending on patient's response to the disease [50].

3.4. Planning of nursing interventions.

As much as possible, any nursing interventions in puerperas should be carefully planned; any urgent and high priority problems must be clearly identified [13]. The next step is to identify the team members which participate in problem-solving. Based on this, the interventions are divided into independent (performed by the nurse only) and interdependent (performed in collaboration with a physician and psychologist, etc.) [15]. Interventions should be individualized for each woman. They should involve both physical and psychological problems in the puerpera [21].

The high-priority interventions include: help with normalization of bowel and bladder habits, organization of breastfeeding and proper breast care, filling the puerpera's knowledge deficits and lacking skills regarding newborn care, feeding, breast care and postpartum hygiene; monitoring the nature and amount of postpartum discharge [13]. Correction of psychological problems in the woman is also important [21].

3.5. Implementation of nursing interventions.

Helping with normalization of bowel and bladder habits is a high-priority task of nursing personnel [37]. The nurse/midwife may need to use a reflex-based stimulation of micturition (turn on the water tap, offer a warm urinal, pour warm water on the external genitalia). On the first day, the nursing personnel should monitor urine output every 2 hours and monitor for bleeding. When such interventions produce no result, possible interventions may include intramuscular injections of 1 ml oxytocin 2 times a day, intramuscular injections of 10% magnesium sulphate 10 ml as a single dose and catheterization of the urinary bladder. If recatheterization is necessary, a Foley catheter should be used for a day [42]. The intestines are emptied using a cleansing enema or a laxative [18].

Organization of breastfeeding and proper breast care involves puerperal education and helping with feeding the newborn [46]. Before each feeding of the

child, it is necessary to do the following: wash hands with soap; wash the mammary gland with soapy tap water and dry with a towel; the first and last doses of milk should be expressed manually; massage the mammary gland with the fingertips; find the site of compaction and massage it a little bit more vigorously; then, using her index finger, the puerpera should press the areola, thus achieving milk expression. The nurse should supervise the expression and offer assistance to the puerpera [27].

The nurse should proactively and systematically address knowledge deficits in the puerpera and help her improve her practical skills in newborn care, feeding, breast care and postpartum hygiene. The healthy puerpera is in one room with her child; the neonatal ward nurse helps the puerpera and teaches her how to care for the baby. While in the maternity ward, the puerpera shall attend the following presentations: “Postpartum hygiene”, “Feeding the newborn”, “Breast care” [21].

It is important to monitor the amount and the nature of postpartum lochia. The nurse should ask the puerpera about the nature of lochia every day. When a slightest deviation is found, the physician should be informed [41].

An important task is correction of psychological problems in women [44]. It is important to support the puerpera in the first days after Cesarean section; the nurse should never raise their voice when performing nursing interventions. It is important to inform the puerpera about the specific changes in her body during the postpartum period, and about the need to get enough sleep and rest [20].

3.6. Evaluation of nursing interventions.

Evaluation of the efficacy of nursing interventions shall be performed on a daily basis. The plan of nursing interventions can be revised or changed after evaluation of efficacy of previous nursing interventions [13]. When the projected goals were not attained, such evaluation allows identifying any impeding factors. If the final result of the nursing process is a failure, then interventions must be evaluated (analyzed) to identify potential errors and to adjust the plan of further nursing interventions [21]. Successful fulfillment of the plan of care depends on the nursing and midwifery personnel, on their professional training and competences, on

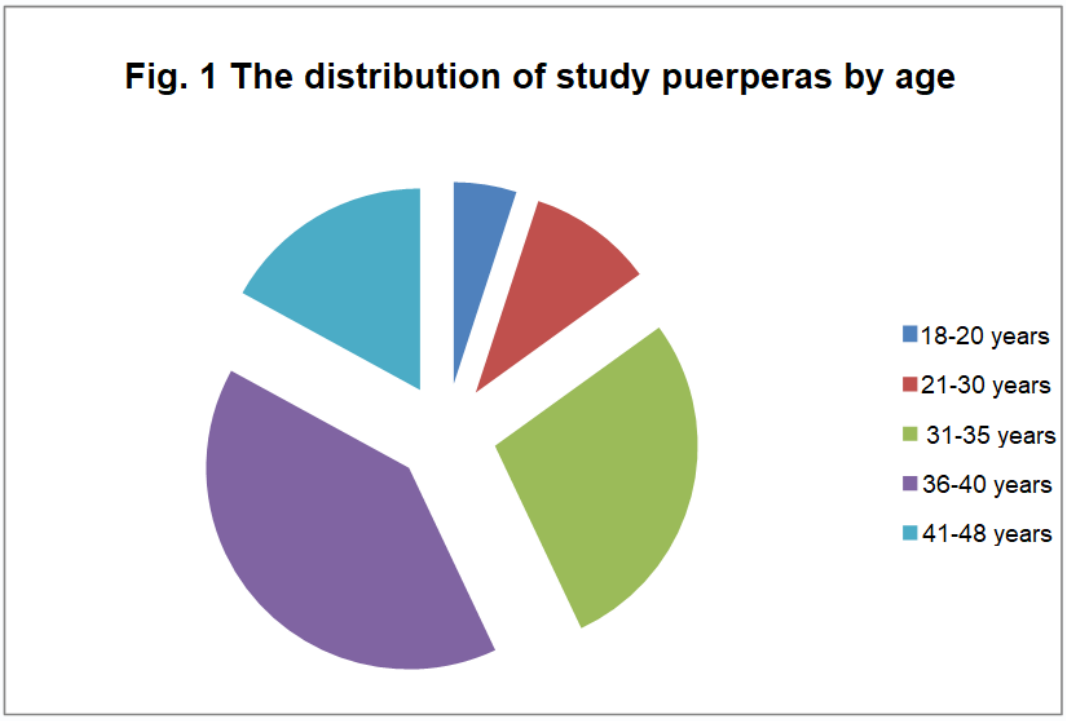
the maternity ward environment and on the woman's willingness to cooperate. Evaluation of the results of nursing interventions allows for identification of strong and weak aspects of the professional activity of the nurse [50].

CHAPTER 4.
THE RESULTS OF THE STUDY AND THEIR ANALYSIS

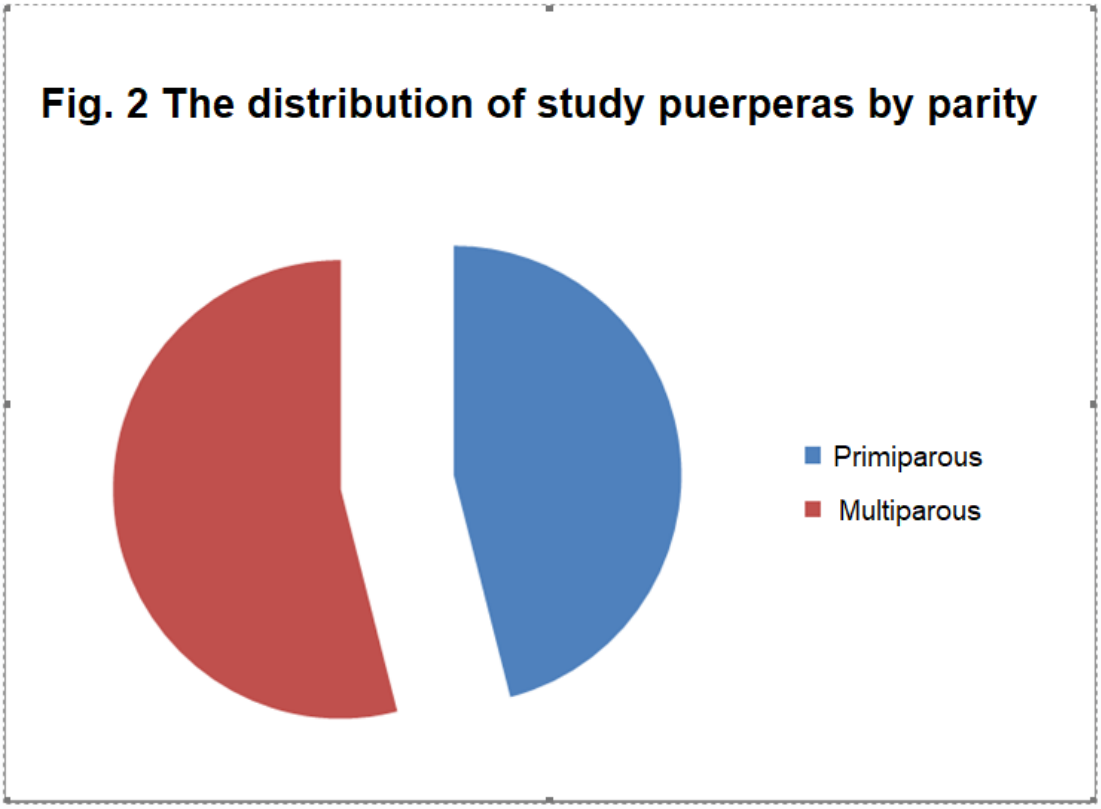
We set ourselves the task of identifying the main problems in postpartum women after delivery by Cesarean section and developing a methodology for their nursing care.

The object of research involved 100 puerperas after delivery by Cesarean section, aged from 18 to 48 years, who were patients in the postpartum unit.

1. ***The distribution of study puerperas by age was as follows:*** 18-20 years: 5 subjects (5%); 21-30 years: 10 subjects (10%); 31-35 years: 28 subjects (28%); 36-40 years: 40 subjects (40%); and 41-48 years: 17 subjects (17%) (see Fig. 1 below).



2. Among the study puerperas, 46 women (46%) were primiparous, and 54 women (54%) were multiparous (Fig. 2).



2. **Determination of puerpera's problems.** Nursing diagnosis was performed as part of nursing care and was based on interviews and observations. The main problems in puerperas after delivery by Cesarean section included the following:

No.	The main problems in puerperas	Total
1.	Pain in the postoperative wound	95 pts. (95%)
2.	Difficulties with urination	72 pts. (72%)
3.	Change in the nature and amount of lochia	92 pts. (92%)
4.	Constipation	80 pts. (80%)
5.	Psychological problems	75 pts. (75%)
6.	Knowledge deficit and lack of practical skills in newborn care, feeding, breast care and postpartum hygiene	68 pts. (68%)
7.	Feeding the newborn	71 pts. (71%)
8.	The status of mammary glands	83 pts. (83%)
9.	Feeling hot, fever	70 pts. (70%)
10.	Sleep impaired	68 pts. (68%)

The following **nursing diagnoses** were made in the puerperas:

No.	Main nursing diagnoses	Total
1.	Physical activity reduced and limited; Self-care deficit associated with pain and postoperative wound; Dizziness and malaise, associated with blood loss	95 pts. (95%)

2.	Increased body temperature, associated with potential inflammation	70 pts. (70%)
3.	Fear, restlessness, anxiety, emotional lability	75 pts. (75%)
4.	Impaired sleep pattern, associated with the need for nighttime infant feeding and anxiety	68 pts. (68%)
5.	Impaired need for bladder and bowel habits due to difficulties with urination and bowel movements	76 pts. (76%)
6.	Change in the nature and amount of lochia	92 pts. (92%)

3. A list of intended nursing interventions was made, which included the following items:

1. Organization of balanced diet for the puerpera.
2. Ensuring psychoemotional and physical rest; monitoring the patient's physical activity.
3. Fulfilling physician's orders.
4. Help with normalization of bowel and bladder habits.
5. Organization of breastfeeding and proper breast care.
6. Addressing knowledge deficits and lack of practical skills in newborn care, feeding, breast care and postpartum hygiene.
7. Monitoring the nature and amount of postpartum discharge.
8. Correction of postpartum psychological problems.
9. Ensuring preparation to additional assessments.

Nursing interventions were performed according to the plan.

4. *The outcomes and the efficacy of nursing interventions.*

During in-patient hospitalization and observation (over the period of 4-10 days) most puerperas reported the following:

- reduced pain in the postoperative wound (in 85 subjects, 85%);
- bowel and bladder habits returned to normal (in 76 subjects, 76%);
- sleep pattern improved (in 63 subjects, 63%);
- psychological disorders resolved or reduced (in 70 subjects, 70%);
- proper breastfeeding of the newborn established (in 85 subjects, 85%);
- knowledge deficits concerning newborn care and feeding, breast care and postpartum hygiene have been addressed (in 61 subjects, 61%).

This data indicates the high professional level of nursing staff and their proper attitude to their professional duties. The leading part in providing accessible and effective care for puerperas is played by the nurse who combines not only such qualities as professional expertise, tidiness and industriousness, but also education, leadership skills, intelligence, critical thinking and integrity.

CONCLUSIONS

1. In the course of the study, the authors have investigated the specific aspects of postoperative management after Cesarean section operation. Of the latter, the most important ones include: early transfer from the critical care unit to the postpartum unit; early ambulation; refraining from the use of drug products with lack of evidence-based efficacy; adequate anesthesia; prevention of postoperative complications; adequate postoperative examination and observation; early discharge. The general goals of follow-up in the postoperative period are as follows: the fastest possible return of the puerpera to her normal life, the formation of exclusively breastfeeding skills; prevention of postpartum complications; maintaining the health of and preventing disease in the newborn.

2. The authors have defined the nursing approaches to organization of proper care for the puerpera after the Cesarean section operation: ensuring proper puerperal regimen and diet, control of the general condition of puerpera, the condition of mammary glands, involution of the uterus, bowel and bladder habits; the hygiene of the puerpera after the Cesarean section operation, prevention of postoperative complications and organization of breastfeeding after the Cesarean section operation.

3. The authors have defined the objective, the structure and the methods for implementation of the nursing process in postpartum management after Cesarean section delivery. The following five constituents are integral to nursing process: nursing assessment (collection of information), determination of puerpera's problems, planning of nursing interventions, implementation of nursing interventions and evaluation of the efficacy of nursing interventions. The objective of the nursing process is to maintain and restore the autonomy of the puerpera in meeting the basic needs of her body in the postpartum period after a Cesarean section operation. Nursing process is a necessary condition to create a system of professional puerperal care.

4. The authors have defined the typical problems in puerpera after Cesarean section delivery and to suggest the ways to eliminate them: pain in the postoperative wound (95 subjects [95%]), difficulties with urination (72 subjects [72%]), changes in the nature and amount of lochia (92 subjects [92%]), constipation (80 subjects [80%]), psychological problems (75 subjects [75%]), knowledge deficits and lack of practical skills in newborn care and feeding, breast care, postpartum hygiene (68 subjects [68%]), feeding the newborn (71 subjects [71%]), the status of mammary glands (83 subjects [83%]), feeling hot and fever (70 subjects [70%]) and sleep disorders (68 subjects [68%]). The following nursing diagnoses were made in puerperas: reduced and limited physical activity; self-care deficits associated with pain, postoperative wound, dizziness and malaise associated with blood loss (95 subjects [95%]), fever associated with potential inflammation (70 subjects [70%]), fear, restlessness, anxiety, emotional lability (75 subjects [75%]), impaired sleep pattern, associated with the need for nighttime infant feeding and anxiety (68 subjects [68%]), impaired need for bladder and bowel habits due to difficulties with urination and bowel movements (76 subjects [76%]), changes in the nature and amount of lochia (92 subjects [92%]). The list of planned nursing interventions was compiled, which included the following: organization of balanced diet for the puerpera, providing mental and physical rest, monitoring physical activity, fulfillment of doctor's orders, help with normalization of bowel and bladder habits, organization of breastfeeding and proper breast care, addressing knowledge deficits and lack of practical skills in newborn care, feeding, breast care and postpartum hygiene, monitoring the nature and amount of postpartum discharge, correction of postpartum psychological problems, and ensuring preparation for additional investigations. Nursing interventions were performed according to the plan.

During in-patient hospitalization and observation (over the period of 4-10 days) most puerperas reported the following: reduced pain in the postoperative wound (in 85 subjects, 85%); bowel and bladder habits returned to normal (in 76 subjects, 76%); sleep pattern improved (in 63 subjects, 63%); psychological disorders resolved or reduced (in 70 subjects, 70%); proper breastfeeding of the newborn established (in 85 subjects, 85%); knowledge deficits concerning newborn care and feeding, breast care and postpartum hygiene have been addressed (in 61 subjects, 61%). This data indicates the high professional level of nursing staff and their proper attitude to their professional duties.

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