



# Evidence-Based Continuity of Midwifery Care from Antenatal Period to Postpartum Contraceptive Services: A Case Study

Desi Latifatul Hasanah <sup>\*1</sup>, Siti Cholifah <sup>\*2</sup>

<sup>1</sup>Universitas Muhammadiyah Sidoarjo

<sup>2</sup>Universitas Muhammadiyah Sidoarjo

---

## ARTICLE INFO

### *Keywords:*

continuity of care;  
low-risk pregnancy;  
turmeric herbal medicine;  
postpartum pain;  
progestin contraception

---

### *Article history:*

Received 2026-03-12

Revised 2026-04-17

Accepted 2026-05-11

---

## ABSTRACT

Continuity of Care (COC) is a comprehensive and continuous midwifery care approach that spans pregnancy, childbirth, postpartum, newborn care, and family planning, with women at the center of care and the therapeutic relationship as the foundation of practice. This article aims to examine the implementation of midwifery care for Mrs. S based on systematically documented clinical case data. A descriptive case study design was used, applying midwifery management and SOAP documentation. The results showed that Mrs. S was classified as Low Risk according to the Poedji Rochjati Risk Scoring Card (KSPR). During pregnancy, the main complaint was physiological back pain, and a habit of consuming turmeric herbal medicine was identified and theoretically analyzed in relation to meconium-stained amniotic fluid during labor. In conclusion, the pregnancy occurred without danger signs, labor progressed spontaneously with a live-born infant, the postpartum and neonatal periods followed standard care, and the mother chose progestin injectable contraception, indicating that continuous midwifery care was implemented effectively and in a well-coordinated manner.

*This is an open-access article under the [CC BY-SA](#) license.*



---

## Corresponding Author:

Desi Latifatul Hasanah

Universitas Muhamamdiyah Sidoarjo; [deviyhasanah@gmail.com](mailto:deviyhasanah@gmail.com)

---

## INTRODUCTION

Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) remain major challenges in health development efforts, particularly in developing countries such as Indonesia. These indicators are widely used to measure the effectiveness of maternal and child health services and to reflect the overall quality of the healthcare system.

International reports have shown that most maternal and infant deaths are preventable when quality, timely, and continuous healthcare services are available throughout pregnancy, childbirth, and the postpartum period [1].

The World Health Organization (WHO) emphasizes that maternal and neonatal healthcare should be delivered comprehensively, in an integrated manner, and oriented toward women's needs throughout the reproductive life cycle. Poorly coordinated services, fragmented care across different levels of healthcare, and a lack of continuity from pregnancy through childbirth, postpartum care, and newborn care have been associated with an increased risk of undetected complications that may ultimately result in maternal or neonatal mortality. This situation demonstrates that the quality of healthcare is determined not only by service availability but also by the continuity and coordination of care provided. Therefore, the Continuity of Care (COC) approach is recommended as a key strategy within healthcare systems, as it ensures that mothers and infants receive continuous monitoring, support, and appropriate interventions, thereby significantly improving maternal and neonatal health outcomes.

In midwifery practice, Continuity of Care (COC) is an approach that ensures women receive ongoing care from the same healthcare provider or a small team of coordinated healthcare professionals throughout pregnancy, childbirth, the postpartum period, newborn care, and family planning services. This approach focuses not only on the continuity of clinical care but also on maintaining a therapeutic relationship between the midwife and the client. Such a continuous relationship enables midwives to gain a comprehensive understanding of the client's physical, psychological, social, and cultural background, allowing care to be tailored more effectively and responsively to individual needs [2].

Numerous international studies have demonstrated that the midwife-led Continuity of Care model is associated with reduced unnecessary obstetric interventions, lower rates of operative birth, increased breastfeeding success, and higher maternal satisfaction with healthcare services. Furthermore, COC contributes to improved early detection of pregnancy risk factors and complications [3].

In Indonesia, midwives play a crucial role as frontline healthcare providers in maternal and child health services, particularly at primary healthcare facilities. The implementation of midwifery care through the Continuity of Care approach is an integral component of professional midwifery competencies. During antenatal care, one important screening tool is the Poedji Rochjati Score Card (KSPR), which is used to identify pregnancy risk factors early. Based on the KSPR assessment, pregnant women can be categorized into Low-Risk Pregnancy (KRR), High-Risk Pregnancy (KRT), or Very High-Risk Pregnancy (KRST) groups, enabling healthcare providers to tailor care plans and follow-up management to the identified level of risk [4].

Women classified as having low-risk pregnancies generally experience physiological pregnancies and can be managed independently by midwives while maintaining appropriate clinical vigilance. Nevertheless, a low-risk pregnancy does not eliminate the possibility of complications if certain factors are not assessed comprehensively [4]. Therefore, the Continuity of Care approach remains essential to ensure that any changes in maternal or fetal condition are promptly and appropriately detected and managed.

In addition to clinical factors, cultural practices and community habits also play an important role in maternal health. One common practice is consuming traditional herbal medicine (jamu) during pregnancy. Turmeric herbal drink is among the most frequently consumed herbal preparations because it is believed to improve health, enhance stamina, and alleviate discomforts associated with pregnancy. Turmeric contains curcumin, an active compound with anti-inflammatory, antioxidant, and various pharmacological properties [5].

However, the use of herbal remedies during pregnancy requires special attention. Several studies have suggested that active compounds in herbal plants may affect uterine smooth muscle activity, uteroplacental blood flow, and fetal responses within the intrauterine environment [6]. Therefore, the use of herbal medicine during pregnancy should be assessed comprehensively by midwives as part of routine midwifery care.

During childbirth, one condition that requires particular attention is the presence of meconium-stained amniotic fluid. Meconium in the amniotic fluid may indicate fetal distress or gastrointestinal maturation of the fetus. This condition has the potential to lead to neonatal complications if not managed appropriately. Consequently, examining the relationship between factors occurring during pregnancy, including herbal medicine consumption, and labor outcomes is important [7].

Furthermore, continuity of care encompasses routine antenatal care visits, the accuracy of antenatal estimated fetal weight compared with actual birth weight, the childbirth process, management of postpartum complaints such as perineal pain resulting from birth canal lacerations, administration of standard neonatal immunizations, and the selection of appropriate postpartum contraceptive methods. These components are interconnected and collectively reflect the overall quality of midwifery care services [8].

Based on the above considerations, this article aims to present and analyze the implementation of comprehensive and continuous midwifery Continuity of Care for Mrs. S. The analysis focuses on the interrelationship among all stages of midwifery care, beginning with pregnancy accompanied by back pain and a habit of consuming turmeric herbal medicine, followed by normal labor with meconium-stained amniotic

fluid, the postpartum period with perineal pain and intermittent abdominal cramping, a healthy neonate receiving appropriate care and immunization, and finally postpartum family planning through progestin injectable contraception. Each stage of care is discussed in relation to the findings observed in Mrs. S and compared with relevant theories and prior research.

## **METHOD**

This study employed a descriptive case study design. A case study was selected because it enables an in-depth, comprehensive exploration of the implementation of Continuity of Care (COC) midwifery services for a single client within her specific context. The subject of this study was Mrs. S, a woman who received continuous midwifery care from the third trimester of pregnancy (August 9, 2025) through family planning services (August 27, 2025) at Agustin Wulansari Independent Midwifery Practice (PMB Agustin Wulansari).

The study applied the midwifery management process, which includes assessment, diagnosis or problem analysis, planning, implementation, and evaluation. Documentation of midwifery care was conducted using the SOAP format (Subjective, Objective, Assessment, and Plan) to ensure that all data and interventions were recorded systematically and continuously.

Data were collected through several methods, including structured and unstructured interviews with the client, direct observation of maternal and neonatal conditions, general and obstetric physical examinations, and documentation review of midwifery records. Subjective data were obtained from the client's complaints and health history, whereas objective data were derived from physical examination findings, supporting examinations, and clinical records.

The instruments used included antenatal assessment forms, the Poedji Rochjati Score Card (KSPR) for pregnancy risk assessment, labor assessment forms, a partograph for labor monitoring, postpartum assessment forms, newborn care assessment forms, and family planning service assessment forms. Data validity was maintained through source triangulation by comparing information obtained from interviews, observations, and documentation.

Data were analyzed using a descriptive-narrative approach, relating the findings from each stage of midwifery care to relevant theories and prior research. The analysis focused on the continuity of care provided, the conformity of midwifery practice with established standards of care, and the relationships among the clinical factors identified throughout the case.

## RESULT AND DISCUSSION

### A. Midwifery Care During Pregnancy

Mrs. S, a 34-year-old woman, attended her sixth antenatal care (ANC) visit on August 9, 2025. Her obstetric status was G3P1A1 with a gestational age of 37 weeks, calculated based on the first day of her last menstrual period (December 27, 2024), and an estimated date of delivery of September 7, 2025. Her obstetric history included one previous term spontaneous vaginal birth resulting in a live infant and one miscarriage at 14 weeks of gestation requiring curettage. Clinical pelvic assessment indicated a normal pelvis. This history is important within the Continuity of Care framework, as it provides insight into previous physiological adaptations to pregnancy and potential care needs during the current pregnancy [2].

Based on the subjective assessment, the client's primary complaint was lower back pain that had persisted for approximately one week. The pain was intermittent, aggravated by physical activity, and slightly interfered with daily activities. To alleviate the discomfort, the client reported resting in a lying position and reducing her activities. This complaint is consistent with common physiological discomforts experienced during the third trimester of pregnancy. Theoretically, pregnancy-related back pain is associated with biomechanical and hormonal changes. Uterine enlargement shifts the center of gravity anteriorly, increasing stress on the lower back muscles. In addition, the hormone relaxin relaxes ligaments and pelvic joints, contributing to postural instability and pain. Previous studies have reported that more than 50% of pregnant women experience back pain during late pregnancy, with most cases being physiological in nature. The midwife explained the causes of back pain, warning signs that should be monitored, and non-pharmacological techniques for pain relief. One intervention provided was acupressure at the Yes Point and KI-3 points. Theoretically, acupressure stimulates endorphin release and improves local blood circulation, thereby reducing pain naturally [9].

Objective examination findings revealed that the mother was in good general condition with vital signs within normal limits. Blood pressure was 90/60 mmHg, which remained within the physiological range for pregnancy; pulse rate was 76 beats per minute; respiratory rate was 16 breaths per minute; and body temperature was 36.5°C. Her pre-pregnancy Body Mass Index (BMI) was 21.5 kg/m<sup>2</sup>, indicating normal nutritional status. Weight gain during pregnancy increased from 50 kg to 61.5 kg, remaining within the recommended range for women with normal BMI and supporting optimal fetal growth [10].

Obstetric examination confirmed a singleton live intrauterine pregnancy. Leopold's maneuvers revealed a cephalic presentation, with the fetal back to the left. Leopold, I indicated that the uterine fundus was approximately two fingerbreadths below the xiphoid process. Leopold II identified the fetal back on the left side and small

fetal parts on the right side. Leopold III confirmed that the presenting part was the fetal head, which was firm and no longer ballotable, while Leopold IV's findings were convergent. These findings indicated an optimal fetal position for vaginal birth. The fetal heart rate was 146 beats per minute, regular and strong, within the normal range. Estimated fetal weight was 2,945 grams, indicating growth appropriate for gestational age. Although the symphysis-fundal height measured 29 cm at 37 weeks of gestation, which was smaller than standard references, the estimated fetal weight remained appropriate for gestational age, suggesting no evidence of fetal growth restriction. This finding may have been influenced by fetal head engagement and maternal multiparity; therefore, fundal height measurements should be interpreted in a comprehensive manner rather than in isolation [8].

Laboratory investigations demonstrated a hemoglobin level of 12.5 g/dL, indicating the absence of anemia. Urinalysis was negative for protein, and blood glucose level was 100 mg/dL, indicating no evidence of preeclampsia or metabolic disorders. Ultrasonography confirmed a live intrauterine fetus in cephalic presentation with the fetal back on the left side. The Poedji Rochjati Score Card (KSPR) assessment yielded a score of 2, classifying Mrs. S as a Low-Risk Pregnancy (KRR). This category indicates a physiological pregnancy that can be managed by a midwife through routine monitoring. Nevertheless, the Continuity of Care approach emphasizes that even low-risk pregnancies require continuous surveillance to detect early changes in maternal or fetal condition [4].

Further assessment revealed that Mrs. S had a habit of consuming turmeric herbal medicine approximately once per month during pregnancy. This infrequent and limited consumption cannot be directly associated with pregnancy complications. However, within the context of continuous midwifery care, this habit should still be documented and theoretically analyzed. Turmeric (*Curcuma longa*) contains curcumin, a biologically active compound capable of crossing the placental barrier. Several studies suggest that curcumin may influence smooth muscle activity and gastrointestinal function, including that of the fetus. Therefore, although these active compounds are consumed only occasionally, exposure to them remains an important consideration when analyzing continuity of care, particularly when specific conditions arise during labor [5][6].

Midwifery care during pregnancy focuses on monitoring maternal and fetal well-being, providing education on labor signs and pregnancy danger signs, and managing back pain. The client also received education regarding birth preparedness, including physical, psychological, and logistical preparations for childbirth. A normal pelvic assessment, cephalic presentation, and a singleton intrauterine fetus were favorable factors supporting spontaneous vaginal birth. This is consistent with obstetric theory, which states that normal labor is influenced by three major factors: power, passage,

and passenger. Potential referral plans were also discussed with the client and her family as part of safe birth planning. Adequate nutritional intake was continuously emphasized to support maternal health and fetal growth. The midwife prescribed 10 tablets of Gestiamin multivitamins, with instructions to take 1 tablet daily to support micronutrient requirements during pregnancy. This approach reflects the principles of Continuity of Care, whereby the midwife not only addresses current complaints but also prepares the woman for subsequent stages of maternity care [2].

## **B. Midwifery Care During Labor and Childbirth**

Mrs. S went into labor on Tuesday, August 26, 2025. She presented with complaints of intermittent abdominal tightening that had begun approximately six hours prior to examination and was accompanied by blood-tinged mucus discharge. This symptom is recognized as an early sign of labor, in which bloody show occurs as a result of the expulsion of the cervical mucus plug in response to cervical effacement and dilatation. Theoretically, this sign indicates the onset of labor and the beginning of physiological cervical changes [11].

Based on the subjective and objective data obtained at 07:00 a.m., the mother was in good general condition, fully conscious (*compos mentis*), and had vital signs within normal limits. Leopold's maneuvers indicated a singleton intrauterine pregnancy in cephalic presentation with the fetal back positioned on the left side. The fetal head was palpable at approximately 3/5 engagement. Vaginal examination revealed cervical dilatation of 3 cm with approximately 45% effacement, intact membranes, cephalic presentation with the occiput as the denominator, the fetal head at Hodge plane II, and no evidence of molding. These findings indicated that Mrs. S was in the first stage of labor, the latent phase. The latent phase is generally characterized by cervical dilatation up to approximately 3–4 cm, accompanied by mild and not yet fully regular uterine contractions [2][12].

Midwifery care during this phase focused on respectful maternity care, monitoring labor progress, and pain management. The midwife provided education regarding the labor process and advised the mother to remain at the birth facility to allow continuous monitoring of labor progress. Respectful maternity care aims to enhance maternal comfort, reduce anxiety, and support the physiological progression of labor. Non-pharmacological pain management through acupressure at the LI4 and LI3 acupoints was taught to the mother to help alleviate labor pain. Theoretically, stimulation of these acupoints may promote endorphin release and inhibit pain impulse transmission [3][13].

At 09:40 a.m., the mother reported an urge to bear down as contractions became increasingly intense. Examination findings revealed cervical dilatation of 8 cm with 75% effacement, uterine contractions occurring four times within ten minutes and lasting approximately 50 seconds each, and the fetal head descending to Hodge plane

III. These findings indicated normal labor progression and confirmed that the mother had entered the active phase of the first stage of labor. The active phase is characterized by rapid cervical dilatation accompanied by strong and regular contractions. During this stage, maternal and fetal well-being became the primary focus of care. Management included regular assessment of labor progress, fetal heart rate monitoring, maintenance of maternal hydration and nutritional intake, and provision of non-pharmacological pain relief measures. The mother was advised not to push until full cervical dilatation had been achieved to prevent maternal exhaustion and cervical edema, which could impede labor progress. This approach is consistent with the principles of physiological childbirth, which emphasize minimal intervention and close monitoring [8][14].

At 11:23 a.m., a female infant was delivered spontaneously with a birth weight of 2,900 grams and a birth length of 40 cm. The newborn was in good condition, with no visible congenital abnormalities. The labia majora and labia minora were clearly identified, and the anus was patent. However, meconium-stained amniotic fluid was observed during delivery. Theoretically, meconium-stained amniotic fluid may occur as a result of fetal hypoxia or as an indicator of fetal gastrointestinal maturation in term pregnancies. The consumption of turmeric herbal medicine during pregnancy cannot be directly established as the cause of meconium-stained amniotic fluid. Nevertheless, curcumin, the active compound in turmeric, possesses pharmacological properties that may influence smooth muscle activity and physiological responses. Minor alterations in the intrauterine environment may stimulate fetal meconium passage as part of an adaptive response, particularly in term pregnancies. In this case, however, the newborn's good clinical condition suggested that the presence of meconium was more likely attributable to physiological fetal maturation rather than to a pathological process. Although considered physiological, this condition requires careful attention because of the potential risk of meconium aspiration syndrome if not managed appropriately. Therefore, immediate drying and airway suctioning were performed after birth [7][15].

Following the infant's birth, Active Management of the Third Stage of Labor (AMTSL) was implemented. This included administration of 10 IU oxytocin intramuscularly into the upper lateral third of the mother's thigh, umbilical cord clamping and cutting, and uterine massage. AMTSL aims to facilitate placental separation and reduce the risk of postpartum hemorrhage. The placenta was delivered completely and intact at 11:35 a.m., measuring approximately 20 cm in diameter, with no retained placental tissue or membranes identified. Further examination revealed lacerations involving the perineal skin and mucosa. Perineal lacerations are common during vaginal birth, particularly when perineal tissues have limited elasticity. Estimated blood loss was approximately 350 mL, which remained within normal limits and did not meet the criteria for postpartum hemorrhage [2][16].



During the fourth stage of labor, the mother reported feeling fatigued. Nevertheless, her general condition remained stable, with normal vital signs and adequate uterine contractions. Management during this stage included close observation during the first two hours postpartum, suturing of the perineal laceration under local anesthesia, maintenance of adequate fluid and nutritional intake, and recommendations for rest. Monitoring during the fourth stage of labor is an essential component of Continuity of Care, enabling the early detection of postpartum complications, particularly hemorrhage and infection [17][18].

Overall, the intrapartum care provided to Mrs. S demonstrated the implementation of Continuity of Care principles, whereby services were delivered continuously from the latent phase of labor through the fourth stage. Adequate monitoring, respectful maternity care, and evidence-based interventions contributed to a smooth labor process and ensured the safety and well-being of both mother and infant.

### **C. Midwifery Care During the Postpartum Period**

During the early postpartum period, specifically 6 hours after delivery, Mrs. S complained of persistent lower abdominal cramping and pain in the vaginal area. Lower abdominal cramping in the early postpartum period is a physiological response associated with uterine involution. Following placental delivery, the uterus contracts strongly to compress the blood vessels at the placental implantation site and prevent postpartum hemorrhage. Adequate uterine contractions are commonly perceived by mothers as abdominal tightening or cramp-like pain, known as afterpains, particularly among multiparous women [19] [20].

Objective examination findings revealed that the mother was in good general condition, fully conscious (*compos mentis*), and had vital signs within normal limits. Blood pressure was 110/70 mmHg, pulse rate was 78 beats per minute, respiratory rate was 16 breaths per minute, and body temperature was 36.4°C, indicating stable hemodynamic status. Abdominal examination revealed a firm uterus with adequate contractions, and the uterine fundus was palpated approximately two fingerbreadths below the umbilicus, indicating normal uterine involution. Lochia rubra was present in a normal amount without evidence of active bleeding, and no signs of anemia or edema were observed. These findings were consistent with the physiological postpartum changes expected within the first 24 hours after childbirth [17].

The vaginal pain experienced by Mrs. S was associated with lacerations of the perineal skin and mucosa sustained during vaginal birth. Theoretically, tissue trauma to the birth canal initiates a local inflammatory response, resulting in pain, mild edema, and discomfort. Perineal pain during the postpartum period may interfere with early mobilization, maternal comfort, and breastfeeding if not managed

appropriately. Therefore, effective postpartum pain management constitutes an important component of continuous midwifery care [21].

Postpartum midwifery care for Mrs. S focused on monitoring uterine involution, preventing hemorrhage and infection, and managing pain. The midwife explained that the abdominal cramping was a normal consequence of uterine involution and emphasized the importance of adequate uterine contractions as an indicator of recovery. Education regarding the characteristics of normal uterine contractions and uterine massage techniques was provided to help maintain appropriate uterine tone. In addition, the mother received education on the causes and management of vaginal pain, including maintaining perineal hygiene, changing sanitary pads regularly, and performing gradual early mobilization. Early mobilization was encouraged because it promotes blood circulation, accelerates healing, and reduces the risk of complications such as thrombosis. Education on adequate rest and nutrition was also provided to support postpartum recovery [8].

Pharmacological management included the administration of mefenamic acid as an analgesic to relieve pain and amoxicillin as prophylactic antibiotic therapy to reduce the risk of infection in the perineal wound. Iron (Fe) supplementation and vitamin A were provided to support maternal recovery, prevent anemia, and enhance immune function. Vitamin A supplementation during the postpartum period may also improve breast milk quality and support both maternal and infant health. Overall, the postpartum care provided to Mrs. S demonstrated continuity of care from the intrapartum to the postpartum period. Continuous monitoring of the mother's stable condition, appropriate management of postpartum complaints, and comprehensive health education reflected the implementation of Continuity of Care principles, ensuring a safe and optimal recovery process [2].

#### **D. Midwifery Care for the Newborn**

Midwifery care for Mrs. S's newborn was initiated immediately after birth, which occurred on August 26, 2025, at 11:23 a.m. Initial assessment findings indicated that the mother reported no concerns regarding her infant's condition. The newborn appeared to be in good general condition, as evidenced by a strong cry, pink skin color, a body temperature of 36.8°C, and a respiratory rate of 44 breaths per minute. These vital parameters were within normal neonatal limits, indicating successful physiological adaptation to extrauterine life.

A comprehensive physical examination revealed no visible congenital abnormalities. Primitive reflexes, including the sucking, Moro, and grasp reflexes, were present, indicating normal neurological function. Theoretically, the presence of primitive reflexes is an important indicator of neonatal neurological maturity and the infant's ability to adapt during the early stages of life [22].

The infant's birth weight was recorded at 2,900 grams. Compared with the antenatal Estimated Fetal Weight (EFW) of 2,945 grams, the birth weight showed excellent agreement with the prenatal estimate. Theoretically, a discrepancy of within  $\pm 10\%$  between EFW and actual birth weight is considered accurate and reflects appropriate fetal growth during pregnancy. This finding also indicates effective antenatal monitoring and normal intrauterine growth throughout gestation.

Immediate newborn care focused on the prevention of hypothermia, support for Early Initiation of Breastfeeding (EIBF), and monitoring of physiological adaptation. The infant was dried thoroughly, kept warm, and placed in rooming-in care with the mother to promote successful breastfeeding. Early Initiation of Breastfeeding plays a crucial role in maintaining neonatal thermoregulation, strengthening mother-infant bonding, and stimulating breast milk production [23].

At 1 hour of age, the newborn entered the sleep phase, a normal component of the neonatal transition. During this period, newborns commonly sleep for approximately 2–4 hours in response to fatigue after birth. This condition is physiological and requires appropriate family education to prevent unnecessary concern. At this stage, the infant received an intramuscular injection of 0.5 mL vitamin K in the lateral thigh as prophylaxis against Vitamin K Deficiency Bleeding (VKDB). In addition, ophthalmic prophylaxis, in the form of eye ointment or drops, was administered to prevent neonatal eye infections resulting from exposure to microorganisms during childbirth [8] [24].

At six hours postpartum, the infant had entered the post-transition period and remained in good general condition. Vital signs were stable, and neonatal reflexes remained positive. Further neonatal care included bathing the infant with warm water, umbilical cord care, and administration of the birth dose of hepatitis B vaccine (HB-0), 0.5 mL intramuscularly in the upper lateral aspect of the left thigh. Administration of the HB-0 vaccine is consistent with neonatal care standards and aims to prevent early transmission of hepatitis B virus infection [3], [25].

Overall, the midwifery care provided to Mrs. S's newborn demonstrated continuity of care from the intrapartum to the neonatal period. The close agreement between birth weight and antenatally estimated fetal weight, successful physiological adaptation, and the provision of essential newborn care reflected comprehensive, evidence-based, high-quality midwifery services within the Continuity of Care framework.

### **E. Midwifery Care in Family Planning Services**

On August 27, 2025, at 08:35 a.m., Mrs. S was 21 hours postpartum, in good general condition, and expressed her intention to use injectable contraception after the completion of the postpartum period. Prior to the current pregnancy, she had been a

long-term user of combined injectable contraception and had no history of serious medical conditions or drug allergies. Therefore, no clinical contraindications to hormonal contraceptive use were identified [26].

Objective examination findings showed that the mother's vital signs were within normal limits, indicating a stable physiological condition. During the early postpartum period, contraceptive selection should consider breastfeeding status, uterine involution, and the safety of the method with respect to breast milk production and quality. Within the Continuity of Care approach, family planning counseling is not viewed as an isolated service but rather as an extension of intrapartum and postpartum care, particularly in supporting the success of exclusive breastfeeding [3].

Mrs. S planned to use progestin-only injectable contraception, specifically Depot Medroxyprogesterone Acetate (DMPA). Theoretically, progestin-only injectable contraceptives prevent pregnancy by suppressing ovulation, increasing cervical mucus viscosity, and inducing endometrial thinning. Unlike combined hormonal contraceptives, which contain both estrogen and progestin, progestin-only methods do not contain estrogen and are therefore considered safer for breastfeeding mothers.

Estrogen is known to interfere with prolactin's action, the hormone primarily responsible for breast milk production. The use of estrogen-containing contraceptives during the early postpartum period may reduce milk volume and negatively affect breastfeeding success. In contrast, progestin-only contraceptives do not inhibit prolactin or oxytocin secretion and therefore do not adversely affect lactation. For this reason, the World Health Organization (WHO) and various midwifery guidelines recommend progestin-only contraception as the preferred option for breastfeeding women. Several studies have demonstrated that progestin-only injectable contraception does not reduce breast milk production, does not significantly alter breast milk composition, and has no adverse effects on infant growth and development. Furthermore, by preventing closely spaced pregnancies, postpartum contraception indirectly supports successful breastfeeding and maternal health [9].

In Mrs. S's case, education regarding the safety of progestin-only injectable contraception for breast milk production constituted an important component of continuous care. Scheduling a follow-up visit for October 10, 2025, demonstrated a well-planned approach that considered the mother's physiological readiness for contraceptive initiation. This strategy is consistent with the principles of postpartum family planning, which emphasize the provision of effective, safe, and appropriate contraceptive methods for breastfeeding women.

Therefore, the selection of progestin-only injectable contraception for Mrs. S was consistent with theoretical foundations and current midwifery practice standards. This method not only provides effective pregnancy prevention but also supports adequate breast milk production and successful exclusive breastfeeding. These outcomes align

with the principles of Continuity of Care in the management of postpartum women and their infants.

## CONCLUSION

The midwifery care provided to Mrs. S throughout pregnancy, childbirth, the postpartum period, newborn care, and family planning services reflects the comprehensive and continuous implementation of the Continuity of Care (COC) approach. During pregnancy, both maternal and fetal conditions were monitored comprehensively; physiological discomforts, such as lower back pain, were managed using evidence-based non-pharmacological interventions; and continuous education on birth preparedness was provided in an integrated manner. Throughout labor and childbirth, the process progressed physiologically with close monitoring, respectful maternity care, and minimal intervention when clinically appropriate, resulting in a safe and spontaneous vaginal birth. Although meconium-stained amniotic fluid was observed during delivery, the newborn's overall good condition suggested that this finding was more likely attributable to physiological fetal maturation rather than pathology, and appropriate management was implemented to prevent potential complications. During the postpartum period, monitoring of uterine involution, pain management, infection prevention, and self-care education supported optimal maternal recovery. Newborn care demonstrated successful physiological adaptation and adherence to established standards. Furthermore, the selection of progestin-only injectable contraception during the early postpartum period was appropriate for a breastfeeding mother and supported the success of exclusive breastfeeding. Therefore, the continuity of care provided not only addressed existing health concerns but also emphasized health promotion and disease prevention strategies, thereby contributing to the overall safety, health, and well-being of both the mother and her infant.

## ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to Mrs. S for her willingness to participate in this case study and for providing valuable information throughout the data collection process. The authors also extend their appreciation to the healthcare professionals who delivered comprehensive midwifery care, as well as to the academic supervisors and all parties who provided guidance, support, and constructive feedback during the preparation of this manuscript. Their contributions were invaluable to the successful completion of this case report.

## BIBLIOGRAPHY

- [1] S. Sukmawati, L. Mamuroh, and F. Nurhakim, "Pengaruh Edukasi Peningkatan Kesejahteraan Ibu dan Janin melalui Antenatal Care Berkualitas terhadap Pengetahuan dan Sikap Ibu Hamil," *Jurnal Kreativitas Pengabdian Kepada*

- Masyarakat (PKM), vol. 8, no. 1, pp. 368–379, Jan. 2025, doi: 10.33024/jkpm.v8i1.18309.
- [2] F. D. Lestari and S. M. F. Hanum, “Continuity of Midwifery Care for Pregnancy, Childbirth, Postpartum, and Newborns,” *Indonesian Journal on Health Science and Medicine*, vol. 2, no. 2, Sep. 2025, doi: 10.21070/ijhsm.v2i2.277.
- [3] R. Septi Arcellya and H. Widowati, “Midwifery Continuity of Care to Support Early Breastfeeding Success,” *Indonesian Journal on Health Science and Medicine*, vol. 2, no. 2, 2025, doi: 10.21070/ijhsm.v2i2.137.
- [4] E. Susilawati, “Antenatal Screening of Pregnancy Risk Using KSPR in High Risk Pregnancy Women Skrining Antenatal Tingkat Resiko Kehamilan menggunakan KSPR pada Ibu Hamil Resiko Tinggi,” *Jurnal Proteksi Kesehatan*, vol. 12, no. 2, pp. 177–183, 2023.
- [5] T. Filardi, R. Vari, E. Ferretti, A. Zicari, S. Morano, and C. Santangelo, “Curcumin: Could this compound be useful in pregnancy and pregnancy-related complications?,” Oct. 01, 2020, MDPI AG. doi: 10.3390/nu12103179.
- [6] A. John and R. Shantakumari, “Herbal Medicine Use During Pregnancy: A Systematic Review and Meta-Analysis,” *Frontiers in Pharmacology*, vol. 13, pp. 1–15, 2022, doi: 10.3389/fphar.2022.816041.
- [7] D. M. Gallo et al., “Meconium-stained amniotic fluid,” May 01, 2023, Elsevier Inc. doi: 10.1016/j.ajog.2022.11.1283.
- [8] S. Choudhary, P. Jelly, and P. Mahala, “Models of maternity care: a continuity of midwifery care,” *Int. J. Reprod. Contracept. Obstet. Gynecol.*, vol. 9, no. 6, p. 2666, May 2020, doi: 10.18203/2320-1770.ijrcog20202373.
- [9] Y. Y. Chen, H. L. Wang, and J. T. Lin, “Effects of Acupressure on Pregnancy-Related Low Back Pain: A Randomized Controlled Trial,” *BMC Complementary Medicine and Therapies*, vol. 22, no. 1, pp. 1–10, 2022, doi: 10.1186/s12906-022-03512-8.
- [10] M. E. Kominiarek and J. Peaceman, “Gestational Weight Gain and Long-Term Maternal and Child Health Outcomes,” *American Journal of Obstetrics and Gynecology*, vol. 227, no. 3, pp. 345–353, 2022, doi: 10.1016/j.ajog.2022.04.026.
- [11] H. Gehling, L. M. Spineli, and M. M. Gross, “Investigating the associations between early labour onset symptoms and self-diagnosed labour onset in a cohort study of primiparas,” *Sexual and Reproductive Healthcare*, vol. 42, Dec.

2024, doi: 10.1016/j.srhc.2024.101033.

- [12] G. Bączek et al., "Spontaneous Perineal Trauma during Non-Operative Childbirth – Retrospective Analysis of Perineal Laceration Risk Factors," *Int. J. Environ. Res. Public Health*, vol. 19, no. 13, Jul. 2022, doi: 10.3390/ijerph19137653.
- [13] S. H. Chua, R. M. Sulaiman, and N. H. Ismail, "Postpartum Uterine Involution and Maternal Recovery Following Vaginal Birth," *Women and Birth*, vol. 36, no. 4, pp. 412–418, 2023, doi: 10.1016/j.wombi.2022.08.011.
- [14] E. Attali, D. Gabbai, R. Gold, A. Groutz, Y. Yogeve, and Y. Baruch, "Impact of maternal age on the risk of perineal injury and obstetric anal sphincter injury in nulliparous women," *Arch. Gynecol. Obstet.*, vol. 313, no. 1, p. 19, Jan. 2026, doi: 10.1007/s00404-025-08286-y.
- [15] S. Einspieler and C. Bosanquet, "Neonatal Neurological Assessment and Primitive Reflexes in Healthy Newborns: Current Evidence," *Early Human Development*, vol. 183, p. 105822, 2024, doi: 10.1016/j.earlhumdev.2024.105822.
- [16] R. Sharma, S. K. Mishra, and P. Gupta, "Early Initiation of Breastfeeding and Neonatal Outcomes: A Systematic Review," *International Breastfeeding Journal*, vol. 18, no. 1, pp. 1–13, 2023, doi: 10.1186/s13006-023-00545-2.
- [17] World Health Organization, "WHO Recommendations on Maternal and Newborn Care for a Positive Postnatal Experience," Geneva, Switzerland: WHO, 2022. [Online]. Available: <https://www.who.int/publications/i/item/9789240045989>
- [18] I. W. Megadhana, I. G. S. Indrawan, I. N. H. Sanjaya, and M. B. D. Aryana, "The Prevalence and Characteristics of Perineal Rupture During Vaginal Delivery," *Bali Medical Journal*, vol. 11, no. 1, pp. 356–359, 2022, doi: 10.15562/bmj.v11i1.3067.
- [19] N. Danur Jayanti and S. Indah Mayasari, "Asuhan Komplementer Tatalaksana Afterpain pada Ibu Postpartum : Literature Review," *Jurnal MID-Z (Midwifery Zigot) Jurnal Ilmiah Kebidanan*, vol. 5, no. 1, pp. 22–28, May 2022, doi: 10.56013/jurnalmidz.v5i1.1369.
- [20] N. A. Addis, D. Abraham, M. Getnet, A. Bishaw, and Z. Mengistu, "Prevalence and Associated Factors of Maternal Birth Trauma Following Vaginal Delivery at University of Gondar Comprehensive Specialized Hospital, North-West Ethiopia, 2022," *BMC Pregnancy Childbirth*, vol. 24, no. 1, Dec. 2024, doi:

10.1186/s12884-024-06635-4.

- [21] M. A. East, J. Begg, and H. Wallace, "Cold Therapy for Perineal Pain Following Vaginal Birth: A Systematic Review," *Midwifery*, vol. 108, p. 103289, 2022, doi: 10.1016/j.midw.2022.103289.
- [22] C. S. Chaves, M. M. Rocha, and A. P. Carvalho, "Feeding Readiness, Sucking Reflex, and Clinical Outcomes in Preterm Infants: An Integrative Review," *Journal of Neonatal Nursing*, vol. 30, no. 2, pp. 85–92, 2024, doi: 10.1016/j.jnn.2023.09.004.
- [23] N. Rollins, K. Bhandari, and N. Hajeerbhoy, "Early Breastfeeding Initiation and Prevention of Neonatal Hypothermia: Evidence from Low- and Middle-Income Countries," *Lancet Child & Adolescent Health*, vol. 7, no. 5, pp. 318–326, 2023, doi: 10.1016/S2352-4642(23)00047-9.
- [24] S. M. Albers, K. Borders, and T. A. Minogue, "Maternal Factors Associated with Perineal Trauma During Vaginal Birth: A Retrospective Cohort Study," *BMC Pregnancy and Childbirth*, vol. 24, no. 1, p. 387, 2024, doi: 10.1186/s12884-024-06387-1.
- [25] A. A. Teshome, B. T. Alemu, and M. A. Bekele, "Association Between Preeclampsia and Neonatal Asphyxia: A Systematic Review and Meta-Analysis," *BMC Pregnancy and Childbirth*, vol. 24, no. 1, p. 229, 2024, doi: 10.1186/s12884-024-06229-0.
- [26] J. Curtis, K. Tepper, and T. Jatlaoui, "U.S. Medical Eligibility Criteria for Contraceptive Use, 2024: Recommendations for Breastfeeding Women," *MMWR Recommendations and Reports*, vol. 73, no. 4, pp. 1–126, 2024, doi: 10.15585/mmwr.rr7304a1.