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Nursing Care Applied to a Pregnant Woman Diagnosed with Preeclampsia According to the Roy Adaptation Model: A Case Report

Opieka pielęgniarska stosowana wobec kobiety w ciąży ze zdiagnozowanym stanem przedrzucawkowym zgodnie z modelem adaptacji Roy: opis przypadku

Abstract

Introduction. Preeclampsia is a complex, multisystem disorder characterized by hypertension and proteinuria, typically manifesting in the second half of pregnancy. Beyond elevated blood pressure and proteinuria, it involves widespread systemic effects that pose significant health risks to both the mother and fetus. Pregnancy complicated by preeclampsia presents unique challenges that require comprehensive and structured nursing care. Nursing theories and models provide a valuable framework for delivering such individualized care.

Aim. This case report aims to describe the nursing care provided to a pregnant woman diagnosed with preeclampsia at 29 weeks' gestation, utilizing Roy's Adaptation Model (RAM) as a guiding framework.

Case study. To ensure confidentiality, the patient is referred to by the initials S.K. Following informed consent, data were gathered through observation, interviews, and review of medical records. The patient's condition was assessed within RAM's adaptive modes, including self-concept, role function, and interdependence.

Conclusion. Based on these assessments, targeted nursing interventions were developed and implemented to support adaptation and optimize health outcomes.

Keywords: Preeclampsia, Roy Adaptation Model, Nursing Care

Streszczenie

Wstęp. Przedrzucawka to złożone, wieloukładowe zaburzenie charakteryzujące się nadciśnieniem i białkomoczem, zwykle objawiające się w drugiej połowie ciąży. Oprócz podwyższonego ciśnienia krwi i białkomoczu, obejmuje szeroko rozpowszechnione skutki ogólnoustrojowe, które stanowią poważne zagrożenie dla zdrowia zarówno matki, jak i płodu. Ciąża powikłana przez przedrzucawkę stwarza wyjątkowe wyzwania, które wymagają kompleksowej i ustrukturyzowanej opieki pielęgniarstwiej. Teorie i modele pielęgniarstwiej zapewniają cenne ramy do świadczenia takiej zindywidualizowanej opieki.

Cel. Niniejszy raport przypadku ma na celu opisanie opieki pielęgniarstwiej świadczonej kobiecie w ciąży, u której zdiagnozowano przedrzucawkę w 29. tygodniu ciąży, wykorzystując jako ramy przewodnie Model Adaptacji Roya (RAM).

Opis przypadku. Aby zapewnić poufność, pacjentka jest określana inicjałami S.K. Po uzyskaniu świadomej zgody dane zbierano poprzez obserwację, wywiady i przegląd dokumentacji medycznej. Stan pacjentki oceniano w ramach trybów adaptacyjnych RAM, w tym samooceny, funkcji roli i współzależności.

Wnioski. Na podstawie tych ocen opracowano i wdrożono ukierunkowane interwencje pielęgniarstwiej na celu wsparcia adaptacji i optymalizacji wyników zdrowotnych.

Słowa kluczowe: stan przedrzucawkowy, model adaptacji Roy, opieka pielęgniarstwiej

Introduction

Prenatal care refers to regular follow-up and health services provided during pregnancy and is an essential component of preventive healthcare. Although the rate of women receiving prenatal care has increased in recent years in our country, it has not yet reached the level seen in developed countries. The main goals of prenatal care are to protect and support the health of the mother and fetus, correct harmful habits, reinforce positive behaviors, provide health education, and prepare the family for new roles and the addition of a new family member. Another important purpose of prenatal care is early identification and management of complications that may arise during pregnancy. Preeclampsia is one of the most critical complications [1, 2].

Pregnancy represents a complex physiological and psychosocial transition in a woman's life, requiring comprehensive and structured healthcare services. This period involves substantial changes in hormonal, cardiovascular, renal, and metabolic systems, which necessitate close monitoring to ensure both maternal and fetal health. Additionally, pregnancy triggers profound psychological and social adjustments as women navigate evolving identities, family dynamics, and lifestyle modifications. Therefore, prenatal care must be holistic, encompassing not only medical surveillance but also psychosocial support, education, and empowerment to foster optimal outcomes [3,4].

Prenatal care is widely recognized as one of the most effective interventions in reducing maternal and neonatal morbidity and mortality. It facilitates early detection of complications, offers timely interventions, and promotes health education regarding

nutrition, physical activity, substance use, and preparation for labor and parenthood. Despite advances in healthcare delivery and increasing global awareness, significant disparities remain, especially in underserved and resource-limited settings. Social determinants such as poverty, low educational attainment, cultural beliefs, and healthcare accessibility influence the quality and frequency of prenatal visits. This inequity exacerbates risks and negatively affects pregnancy outcomes, emphasizing the importance of tailored healthcare strategies to address barriers and promote equitable care [5, 6].

Among the various complications that can arise during pregnancy, hypertensive disorders constitute a leading cause of maternal mortality worldwide. Preeclampsia, in particular, poses significant challenges due to its multifactorial etiology, unpredictable progression, and potential severity. It is defined clinically by the new onset of hypertension and proteinuria after 20 weeks of gestation, though modern diagnostic criteria also include other organ dysfunctions such as thrombocytopenia, impaired liver function, renal insufficiency, pulmonary edema, and cerebral or visual symptoms [7, 8]. The pathophysiology of preeclampsia is complex and not yet fully elucidated but is generally understood to involve abnormal placentation, endothelial dysfunction, and systemic inflammatory responses leading to vasoconstriction and multiorgan damage [9]. These alterations result in compromised placental perfusion, which not only endangers maternal health but also jeopardizes fetal growth and survival.

Preeclampsia is a multisystem disorder that typically develops after the 20th week of gestation and may persist for up to four weeks postpartum. Its clinical manifestations include elevated blood pressure, edema, and proteinuria. When preeclampsia is accompanied by loss of consciousness and tonic-clonic convulsions resembling epileptic seizures, it is referred to as “eclampsia.” The systemic nature of preeclampsia and the potential for its progression to eclampsia if left untreated are the two most critical aspects of this condition [10, 11].

Globally, preeclampsia affects approximately 2–15% of pregnancies and accounts for a substantial proportion of maternal and perinatal deaths. The World Health Organization estimates that hypertensive disorders contribute to approximately 14% of all maternal deaths. Annually, more than 10 million women are diagnosed with preeclampsia worldwide, with mortality estimates ranging between 50,000 and 60,000 maternal deaths per year. Neonatal consequences include prematurity, low birth weight, and stillbirth, with around 500,000 fetal and neonatal deaths attributed to preeclampsia-related complications. These statistics highlight the critical need for effective prenatal surveillance, prompt diagnosis, and multidisciplinary management approaches [12–15].

Inadequate care during the postpartum period can lead to significant problems for both the mother and baby. Early identification of complications and provision of comprehensive nursing care can be achieved by using nursing theories and models. These models, by focusing on the relationships between core nursing concepts, help identify problems encountered during practice and provide a basis for developing appropriate

interventions. They also enable a holistic evaluation of individuals and their environment, contributing to a more structured and systematic approach to care [11, 15].

The clinical management of preeclampsia involves careful balancing of maternal and fetal risks. While delivery is the definitive treatment, timing must consider gestational age and fetal viability. Medical management often includes antihypertensives, magnesium sulfate for seizure prophylaxis, and close maternal-fetal monitoring. The nurse's role is pivotal in this context, encompassing assessment, monitoring for deterioration, administration of medications, patient education, emotional support, and coordination of multidisciplinary care [16]. Nurses must also advocate for the patient's needs and promote adherence to treatment plans.

Furthermore, pregnancy complicated by preeclampsia often entails significant psychosocial distress. Women may experience heightened anxiety, fear of adverse outcomes, guilt, and uncertainty about their changing bodily image and maternal role. The stress of hospitalization, potential early delivery, and separation from the newborn compound these challenges. Such emotional responses can influence adaptation and coping, underscoring the importance of psychosocial support and therapeutic communication within nursing care [17].

This case report describes the nursing care provided to a woman diagnosed with preeclampsia using Roy's Adaptation Model (RAM). Complications experienced during pregnancy often require individuals to adapt to the rapidly changing physical and emotional conditions. By planning care in line with RAM, nurses can support patients' adaptation processes and improve their health outcomes. RAM, developed by Sister Callista Roy in 1970, was used as the guiding framework. While developing her model, Roy was influenced by Selye's General Adaptation Theory, Johnson's Behavioral System Model, and Lazarus and Folkman's Interactional Model of Stress and Coping. The underlying philosophy of the model is rooted in humanism and a holistic view of human nature [18].

Roy posits that individuals constantly interact with their environment and are both influenced by and capable of influencing it. Individuals strive to adapt physiologically, psychologically, and socially to their environment. Although people have a high capacity for adaptation, Roy emphasizes that factors such as past experiences, perception of events, intensity of environmental changes, and coping abilities can limit this adaptive capacity. In the model, both internal and external factors were considered stimuli. Roy classifies these into three types: focal stimuli, which are the most immediate and directly affect behavior; contextual stimuli, which are not the direct cause of behavior but influence it; and residual stimuli, which are subjective and difficult to measure but may still impact the individual. Individuals are exposed to a wide range of stimuli, including physiological, psychological, and social stimuli. When planning nursing interventions, the potential effects of these stimuli should be considered. For nurses to provide effective care, they must identify and interpret focal, contextual, and residual stimuli using a scientific foundation and develop care plans accordingly [18, 19].

Roy defines four adaptive modes in which the regulatory (physiological) and cognitivist (psychosocial) subsystems are visibly activated. The physiological mode is related to the body's responses to environmental stimuli and includes functions such as oxygenation, elimination, nutrition, protection, activity, and rest. The self-concept mode refers to the beliefs and feelings a person has about themselves over time. It emphasizes the holistic evaluation of the individual, considering not only physical, but also emotional and spiritual aspects. In the role function mode, Roy defines role as the behaviors expected from individuals based on their position in society (e.g., mother, student, and child). This mode focuses on how individuals maintain or transition between roles, according to societal expectations. The interdependence mode includes relationships with significant others and support systems, with the basic needs in this area being love, respect, and security [20, 21].

Theoretical nursing models offer structured frameworks to address the complexity of care required in such multifaceted situations. Roy's Adaptation Model (RAM), developed by Sister Callista Roy, is particularly suited to guide care for women with preeclampsia due to its comprehensive approach to human adaptation. RAM conceptualizes individuals as holistic adaptive systems interacting constantly with environmental stimuli. The goal of nursing, according to RAM, is to promote positive adaptive responses in four interrelated domains: physiological, self-concept, role function, and interdependence [22]. The physiological mode involves maintenance of bodily functions such as oxygenation, nutrition, elimination, activity, rest, and protection from harm. In the context of preeclampsia, this mode focuses on stabilizing blood pressure, ensuring adequate oxygen delivery, managing fluid balance, and monitoring organ function. The self-concept mode encompasses the patient's psychological integrity, including body image and feelings about herself and her pregnancy. Nursing interventions in this domain aim to reduce anxiety, enhance self-esteem, and promote positive coping mechanisms. The role function mode addresses the individual's roles and responsibilities within family and society. Pregnancy-related complications often disrupt these roles, requiring nurses to support the patient's adaptation to temporary or permanent changes in role expectations. Finally, the interdependence mode highlights the importance of social support, emphasizing relationships that provide love, respect, and security, which are crucial during periods of stress and uncertainty [23].

A unique aspect of RAM is the classification of stimuli influencing adaptive responses. Focal stimuli are immediate challenges faced by the individual (e.g., elevated blood pressure, pain); contextual stimuli include environmental and personal factors influencing adaptation (e.g., hospital environment, family support); residual stimuli are often unconscious or unquantifiable influences based on past experiences or cultural beliefs [23, 24]. This nuanced understanding aids nurses in comprehensive assessment and individualized care planning.

In summary, preeclampsia presents multidimensional challenges that affect physiological health, psychological well-being, social roles, and support systems. Application

of Roy's Adaptation Model enables nurses to provide holistic care tailored to these domains, fostering adaptation and improving outcomes. This case report aims to describe the nursing care provided to a pregnant woman diagnosed with preeclampsia during the prenatal period, guided by RAM's framework, highlighting the practical application of theory to complex clinical care.

Aim

This case study aims to describe the nursing care provided to a pregnant woman diagnosed with preeclampsia during the prenatal period using Roy's Adaptation Model as the guiding framework. The model facilitates a holistic, individualized, and systematic approach to care that promotes maternal adaptation and improves pregnancy outcomes.

Case presentation

This case report aims to provide a comprehensive description of the nursing care provided to a pregnant woman diagnosed with preeclampsia at 29 weeks of gestation, framed within the theoretical context of Roy's Adaptation Model (RAM). The participant, referred to as S.K. for confidentiality, was admitted to a state hospital in the southwestern region of Turkey. She voluntarily consented to participate in this study after being fully informed about its objectives, methodologies, and confidentiality safeguards, with written informed consent obtained prior to data collection.

To protect patient privacy and adhere to ethical standards, real names were withheld and the code "S.K." was used throughout the documentation. Data collection involved multiple methods including direct clinical observation, semi-structured interviews, and a thorough review of medical records, enabling a multi-dimensional understanding of S.K.'s condition and care needs. The researcher systematically organized all collected data according to the framework provided by Roy's Adaptation Model, ensuring that nursing diagnoses, interventions, and outcomes were holistically addressed.

The nursing care approach in this case was structured around recognized classifications within nursing practice: NANDA International nursing diagnoses, Nursing Intervention Classification (NIC), and Nursing Outcome Classification (NOC). This methodological rigor ensured a standardized yet individualized care plan that was both evidence-based and adaptable to S.K.'s evolving clinical status.

Findings Related to the Physiological Domain

S.K., a 29-week pregnant woman, presented to the hospital with classic symptoms suggestive of preeclampsia, including hypertension, nausea, vomiting, and episodes of

dizziness. Following a comprehensive clinical assessment involving physical examination and diagnostic testing—including blood pressure monitoring, urine analysis, and blood tests—the diagnosis of preeclampsia was confirmed. Given the potential severity and rapid progression of this condition, she was promptly admitted to the obstetrics and gynecology inpatient unit for continuous surveillance and multidisciplinary management.

On admission, her vital signs were within the following ranges: body temperature at 36.5°C, pulse rate elevated at 114 beats per minute, blood pressure moderately controlled at 120/70 mmHg, and oxygen saturation stable at 98% on room air. Throughout her hospital stay, these parameters were meticulously monitored by nursing personnel, facilitating timely interventions in response to any deviations.

Pain assessment revealed a moderate level of discomfort, with a Visual Analog Scale (VAS) rating of 3 out of 10. The patient reported exacerbation of pain during prolonged sitting, certain body positions, and transitional movements such as sitting down and standing up. Her treatment plan included the administration of a prescribed analgesic (once daily) alongside intravenous electrolyte infusions (1000 ml, twice daily), aiming to manage pain and maintain electrolyte balance.

S.K.'s socio-demographic and obstetric details are detailed in Table 1, providing context to her medical condition and care requirements.

Patient Medical History

The patient's medical background revealed several pertinent factors influencing her current health status. She has a documented history of diabetes mellitus, managed medically over previous years, and a history of bariatric surgery (sleeve gastrectomy) undertaken prior to pregnancy to address obesity-related issues. Furthermore, she reported undergoing two surgical procedures for wart removal in both the genital and lower extremity regions. Family history was significant for metabolic disorders; her mother, father, and brother all have diabetes mellitus, with hypercholesterolemia present in both parents. Notably, her brother also had a history of sleeve gastrectomy, indicating a familial pattern of metabolic and weight-related health issues.

The patient disclosed very minimal prior use of cigarettes and alcohol before pregnancy but abstained completely during the current pregnancy, reflecting health-conscious behavior in alignment with prenatal care guidelines.

Physiological Domain Evaluation

Within the physiological domain, critical elements such as oxygenation, nutritional intake, elimination patterns, physical activity, rest, and protective behaviors were systematically assessed. S.K.'s oxygen saturation fluctuated between 96% and 98%, and she reported no respiratory difficulties or complaints such as dyspnea or cough.

Nutritionally, although she described her pre-pregnancy diet as balanced and healthy, she acknowledged difficulty fully avoiding processed and packaged foods, which may contribute to nutritional imbalances. During hospitalization, she was placed on a medically restricted diet tailored to her gestational and metabolic needs, but expressed dissatisfaction and reluctance to consume hospital-provided meals, underscoring a common challenge in inpatient nutritional management.

Her fluid intake was adequate, with an average daily consumption of 3 to 4 liters of water, which is beneficial in supporting renal function and preventing dehydration. Anthropometric measurements indicated a height of 1.85 meters and a weight of 104 kg, resulting in a calculated Body Mass Index (BMI) of 30.4 kg/m², categorized as Class I obesity, a significant risk factor for complications in pregnancy.

S.K. reported increased appetite and specific cravings for high-calorie snack items such as chips and chocolates; however, she exercised restraint and did not consume these due to concerns over health impacts. She also mentioned recent episodes of constipation but confirmed a bowel movement on the day of assessment. Observations noted deficiencies in perineal hygiene, an important factor in preventing infection and promoting comfort.

Laboratory results pertinent to her clinical status are summarized in Table 2, providing objective data that informed nursing and medical interventions.

Despite her pain complaints, S.K. maintained independent mobility and did not require assistance with activities of daily living (ADLs). However, she reported sleep disturbances characterized by frequent awakenings, discomfort attributed to hospital beds, poorly ventilated and warm room conditions, and interruptions by nursing staff for routine monitoring. She expressed feelings of fatigue upon waking. Neurological and sensory evaluations indicated no deficits; she was fully oriented to person, place, and time, indicating intact cognitive function.

Findings Related to the Self-Concept Domain

Regarding the self-concept domain, S.K. articulated that physical changes associated with pregnancy did not significantly disturb her self-image. She emphasized that this pregnancy was planned and highly desired. Nonetheless, due to a history of miscarriage, she underwent multiple pregnancy tests in early gestation to confirm fetal viability. During the initial months, she avoided disclosing her pregnancy to others, driven by fear of recurrent loss, which caused her to experience emotional ambivalence and difficulty fully embracing the pregnancy.

S.K. further described that although fertility treatments had been planned, she conceived spontaneously prior to initiating medical interventions. Upon the onset of preeclampsia symptoms, she experienced significant anxiety, fearing for the health and survival of her fetus, which led to an initial sense of hopelessness and feelings of guilt about these emotional responses. However, hospitalization and medical stabilization

allowed her to gain knowledge about the manageability of her condition, reducing anxiety and increasing feelings of safety and security during her hospital stay.

Findings Related to the Role Function Domain

S.K. described her family structure as nuclear, consisting of herself, her husband, and her mother, within which she fulfills multiple roles, including wife, daughter, homemaker, and expectant mother. Currently, due to health limitations imposed by preeclampsia and hospitalization, she acknowledged an inability to perform these roles fully but expressed that her focus was rightly on her health and the well-being of her unborn child, mitigating feelings of role-related distress.

She characterized her relationship with her husband as positive and supportive, highlighting shared planning and mutual desire for the pregnancy. She also reported earning income through cultivating flowers in her home garden, which she considers a meaningful activity. The patient expressed contentment with the prospect of raising her child in a natural and nurturing environment, feeling reassured that separation from her baby postpartum would not be necessary.

Findings Related to the Interdependence Domain

In the interdependence domain, S.K. indicated that cohabiting with her mother provided significant emotional and practical support, contributing to a more comfortable pregnancy experience. Conversely, she reported a strained and distant relationship with her husband's family, who, despite being aware of her hospitalization, did not initiate contact or provide support. During her hospital stay, a close friend assumed the role of caregiver, offering consistent emotional and instrumental support, which S.K. deeply appreciated.

The patient expressed reluctance to maintain communication with her husband's family after discharge, yet acknowledged feelings of obligation rooted in her husband's expectations and cultural norms. This dynamic highlights complex social factors affecting her interdependent relationships and emotional well-being.

Results and Nursing Interventions Based on Roy's Adaptation Model

In accordance with Roy's Adaptation Model (RAM), the nursing care provided to patient S.K. was meticulously structured around the four key adaptive modes: physiological, self-concept, role function, and interdependence. This model enabled a holistic, patient-centered approach where nursing diagnoses were identified using the North American Nursing Diagnosis Association (NANDA) taxonomy. Subsequently, tailored Nursing Outcomes Classification (NOC) and Nursing Interventions Classification (NIC) were applied to formulate and implement a comprehensive, individualized care plan

that addressed S.K.’s multifaceted needs and supported her adaptive responses in the context of high-risk pregnancy complicated by preeclampsia.

1. Physiological Adaptive Mode

The physiological mode in Roy’s Adaptation Model centers on maintaining the integrity and stability of bodily systems vital for life, such as oxygenation, nutrition, elimination, rest, protection, and activity. During pregnancy, and especially in complicated cases such as preeclampsia, physiological adaptation is challenged by increased demands on the cardiovascular, renal, and endocrine systems. Careful assessment and management of physical symptoms are imperative to optimize both maternal and fetal health.

NANDA Diagnosis 1: Acute pain related to musculoskeletal strain, as evidenced by a Visual Analog Scale (VAS) score of 3/10

- *NOC Outcome:* Pain Level
- *NIC Interventions:*
 - Frequent assessment of pain intensity using standardized scales to monitor progression or relief.
 - Patient education to identify specific activities or positions that exacerbate pain and teaching alternative positions to alleviate discomfort.
 - Administration of analgesics as prescribed, with ongoing evaluation of efficacy and side effects to ensure optimal pain control.
 - Promotion of proper body mechanics and ergonomic positioning to reduce musculoskeletal strain, including the use of supportive pillows or positioning aids. These interventions not only reduced S.K.’s pain but also facilitated mobility and improved overall comfort, which is crucial for preventing secondary complications like immobility-associated risks.

NANDA Diagnosis 2: Imbalanced nutrition: More than body requirements (Body Mass Index [BMI]: 30.4)

- *NOC Outcome:* Nutritional Status: Nutrient Intake
- *NIC Interventions:*
 - Collaboration with a clinical dietitian to develop a culturally sensitive and nutritionally balanced meal plan tailored to S.K.’s pregnancy requirements and comorbid conditions.
 - Comprehensive education about the risks associated with excessive weight gain, particularly in the context of preeclampsia, emphasizing the importance of limiting processed and high-sodium foods.

- Routine monitoring of daily weight and fluid balance, alongside documenting nutritional intake to promptly identify imbalances.
- Addressing patient dissatisfaction with hospital meals by exploring alternative options within the prescribed dietary limits, ensuring adherence without compromising nutrition. These measures aimed to optimize maternal-fetal nutrition and reduce complications related to obesity and hypertension during pregnancy.

NANDA Diagnosis 3: Disturbed sleep pattern related to hospital environment and anxiety

- *NOC Outcome:* Sleep Pattern
- *NIC Interventions:*
 - Coordination of nursing care activities to minimize nighttime interruptions, such as scheduling vital sign checks and medication administration to avoid unnecessary disturbances.
 - Environmental modifications including adjustment of room lighting, temperature control, and sound reduction strategies.
 - Patient education on relaxation and stress-reduction techniques, such as guided imagery, progressive muscle relaxation, and controlled breathing exercises.
 - Utilization of non-pharmacological sleep aids, including calming music, eye masks, and aromatherapy, to promote natural sleep initiation and maintenance. Improving S.K.'s sleep quality contributed to enhanced physical healing, mood stabilization, and overall adaptation to the pregnancy experience.

NANDA Diagnosis 4: Risk for constipation related to reduced mobility and dietary intake

- *NOC Outcome:* Bowel Elimination
- *NIC Interventions:*
 - Encouragement of increased dietary fiber intake through fruits, vegetables, and whole grains, along with adequate hydration to maintain bowel regularity.
 - Promotion of safe, progressive ambulation tailored to the patient's energy levels and clinical status, enhancing gastrointestinal motility.
 - Administration of stool softeners and mild laxatives as prescribed to prevent discomfort and complications.
 - Daily monitoring of bowel movement frequency and characteristics to detect early signs of constipation and intervene accordingly.
 - Preventing constipation not only relieved physical discomfort but also reduced stress and potential secondary complications such as hemorrhoids, contributing to holistic well-being.

2. Self-Concept Adaptive Mode

The self-concept mode encompasses an individual's feelings, beliefs, and perceptions about themselves, which are often deeply impacted during pregnancy, especially when complicated by adverse health conditions. S.K.'s emotional response to her diagnosis, as well as the psychological burden of a prior miscarriage, significantly influenced this adaptive mode.

NANDA Diagnosis 1: Situational low self-esteem related to pregnancy complications and previous pregnancy loss

- *NOC Outcome:* Self-Esteem
- *NIC Interventions:*
 - Creation of a supportive environment that encourages S.K. to openly express fears, worries, and feelings without judgment, fostering emotional release and validation.
 - Affirmation of her efforts and progress in managing her condition, highlighting strengths and resilience to rebuild positive self-perception.
 - Encouragement of goal setting, such as small achievable daily objectives related to self-care and pregnancy preparation, enhancing feelings of accomplishment.
 - Promotion of reflective practices such as journaling or guided conversations about her maternal identity, allowing cognitive reframing and empowerment. These psychosocial interventions aimed to restore and reinforce S.K.'s self-worth, enabling better emotional adjustment.

NANDA Diagnosis 2: Anxiety related to uncertain pregnancy outcomes and fetal health concerns

- *NOC Outcome:* Anxiety Level
- *NIC Interventions:*
 - Provision of clear, evidence-based information about preeclampsia, its management, and potential outcomes to reduce fear stemming from uncertainty.
 - Teaching and practicing relaxation techniques such as progressive muscle relaxation, diaphragmatic breathing, and mindfulness meditation to help control physiological symptoms of anxiety.
 - Facilitating active patient participation in decision-making, thereby increasing her sense of control and self-efficacy.
 - Offering continuous emotional support through frequent reassurance, empathetic listening, and presence to alleviate feelings of isolation and distress. By addressing anxiety comprehensively, the nursing interventions fostered psychological stability and enhanced adherence to care.

3. Role Function Adaptive Mode

The role function mode evaluates how illness or hospitalization influences an individual's ability to fulfill societal and familial roles. S.K. experienced role disruptions as a wife, daughter, homemaker, and expectant mother due to her hospitalization.

NANDA Diagnosis: Impaired role performance related to physical limitations and hospitalization

- *NOC Outcome:* Role Performance
- *NIC Interventions:*
 - Facilitating S.K.'s acceptance and redefinition of her roles during hospitalization by encouraging realistic expectations and recognizing temporary limitations.
 - Engaging family members, especially the husband and mother, to actively participate in household tasks and caregiving roles, alleviating patient burden.
 - Providing counseling to promote effective communication within the family, reducing potential conflicts arising from altered roles.
 - Encouraging maternal role development through activities such as preparing for the baby's arrival, attending prenatal education classes, and journaling about motherhood hopes and fears. These interventions aimed to preserve S.K.'s sense of identity and support adaptation to evolving family dynamics.

4. Interdependence Adaptive Mode

This mode highlights the significance of interpersonal relationships and social support systems in the adaptive process. S.K.'s primary support came from her mother and close friend, while her relationship with her husband's family was marked by tension.

NANDA Diagnosis 1: Ineffective family coping related to lack of support from in-laws and strained relationships

- *NOC Outcome:* Social Support
- *NIC Interventions:*
 - Identifying S.K.'s preferred sources of emotional support and facilitating connections to strengthen these networks.
 - Promoting open, honest communication with significant family members to address misunderstandings and reduce conflict.
 - Referral to social workers or mental health counselors specializing in family dynamics and conflict resolution to provide professional guidance.

- Psychoeducation aimed at improving problem-solving skills and promoting healthy family interactions. By addressing family dysfunction proactively, nurses worked to create a more supportive environment conducive to S.K.'s adaptation.

NANDA Diagnosis 2: Impaired social interaction related to strained family dynamics and emotional withdrawal

- *NOC Outcome:* Family Functioning
- *NIC Interventions:*
 - Assisting S.K. in establishing and maintaining healthy personal boundaries within challenging relationships, preserving emotional well-being.
 - Offering access to counseling services focused on conflict resolution, assertiveness training, and coping strategies.
 - Encouraging involvement of supportive individuals in care planning and daily emotional support.
 - Reinforcing the importance of self-care and emotional independence as foundations for effective social interaction and resilience.
 - These comprehensive measures aimed to enhance S.K.'s social support, reduce isolation, and foster adaptive interpersonal relationships.

Discussion

Pregnancy is an extraordinarily complex and transformative experience involving significant biological, psychological, and social changes for women. The maternal body undergoes profound physiological adaptations to accommodate fetal development, while simultaneously, women face psychological and emotional challenges as they adjust to their evolving roles. This intricate interplay can be further complicated by obstetric disorders such as preeclampsia, which not only jeopardizes maternal and fetal health through its direct medical impact but also exacerbates psychosocial stressors, including anxiety, fear, and uncertainty. In such contexts, nursing care should extend beyond routine clinical management, embracing a holistic and comprehensive approach that supports both the physiological stability and psychosocial well-being of the mother [12, 13].

One of the central tenets of nursing care is the facilitation of adaptive responses to diverse internal and external stressors. Roy's Adaptation Model (RAM) serves as a valuable conceptual framework, enabling nurses to assess the multifaceted needs of patients, guide individualized interventions, and promote positive adaptation across four interrelated modes: physiological, self-concept, role function, and interdependence. The case of S.K., a woman diagnosed with preeclampsia at 29 weeks gestation, exemplifies the practical application of RAM in a clinical setting, illustrating how a theoretically grounded nursing process can enhance care quality and patient outcomes [13].

Preeclampsia remains a leading cause of maternal and perinatal morbidity and mortality worldwide. The condition is characterized by new-onset hypertension and proteinuria after 20 weeks gestation, often accompanied by multi-system involvement such as renal impairment, liver dysfunction, and neurological symptoms. The management of preeclampsia involves meticulous monitoring and timely intervention to prevent progression to eclampsia and associated complications [6]. In this context, the nursing role is critical not only in clinical monitoring but also in providing holistic care that addresses physiological, psychological, social, and developmental needs, as advocated by Roy's Adaptation Model (RAM). The case of S.K. exemplifies the multidimensional challenges faced by women with preeclampsia, including physiological instability, emotional distress, role disruption, and complex interpersonal dynamics.

Some problems experienced during pregnancy constitute serious stress factors for both the woman and the fetus. In addition to physiological problems, accompanying psychological changes may cause maternal anxiety and even lead to fetal loss. Nursing care offered during this period must be planned in an individualized, up-to-date, and evidence-based manner to facilitate women's adaptation. In this context, nursing theories and models focusing on adaptation can be effectively utilized in care. In this case, the care plan for S.K. was systematized based on the four adaptive modes of Roy's Adaptation Model (RAM) [19].

During pregnancy, women may experience various physiological and psychological changes. Within the scope of the "physiological mode" of RAM, nursing diagnoses such as pain, disturbed sleep patterns, constipation, and knowledge deficits were identified. S.K.'s physiological needs were comprehensively assessed, and interventions were implemented in areas such as pain management, regulation of sleep patterns, and addressing her lack of knowledge. These interventions contributed to the improvement and maintenance of patients' physical health. For example, following the education provided as part of the intervention for the "knowledge deficit" diagnosis, it was observed that the patient became more informed about perineal hygiene [20].

The birth process and related complications, together with previous experience, significantly affect a woman's self-concept. In this case, the diagnosis of anxiety was associated with RAM's "self-concept mode." S.K. experienced high levels of anxiety due to concerns stemming from her previous pregnancy loss. Hospitalization can be particularly stressful for women because it disrupts them from their usual roles. Under the "role function mode" of RAM, diagnoses of role performance deficiency and risk of disruption in family processes were identified. S.K. stated that although she could not fulfill her roles at home due to hospitalization, her priority was the health of herself and her baby; therefore, she was not overly upset about this disruption in roles [21].

RAM emphasizes the importance of interpersonal relationships and social support during childbirth and health-related challenges. The diagnosis of impaired family relationships was identified about RAM's "interdependence mode." interdependence mode. S.K. reported that she did not want to communicate with her husband's fam-

ily due to existing problems, but felt obligated to do so for the sake of her husband. To prevent further issues arising from impaired family relationships, family members should be included in the care process, and the formation of support groups should be encouraged [23, 24].

Physiological Domain: Nursing Considerations

The physiological challenges faced by S.K., including pain management, fluid and electrolyte balance, nutritional challenges, and monitoring of vital signs, are consistent with those documented in the literature. Nurses must implement evidence-based interventions such as regular pain assessment using validated tools like the Visual Analog Scale (VAS), individualized dietary planning in collaboration with dietitians, and vigilant observation for signs of disease progression [25].

S.K.'s obesity (BMI 30.4) is an established risk factor for adverse pregnancy outcomes including gestational hypertension and preeclampsia. This necessitates additional nutritional counseling and weight management strategies tailored to pregnancy. Her reported dissatisfaction with hospital meals reflects a common barrier in inpatient nutritional care, which can be mitigated through patient-centered approaches that incorporate cultural preferences and flexibility. Sleep disturbances reported by S.K. underscore the need for environmental modifications and non-pharmacologic interventions, as poor sleep quality is linked to exacerbation of hypertensive disorders in pregnancy. Strategies such as noise reduction, temperature regulation, and relaxation techniques should be incorporated into nursing care plans [26].

Self-Concept Domain: Psychological Support

S.K.'s initial anxiety and feelings of guilt are well-documented psychological responses in high-risk pregnancies, particularly following previous adverse pregnancy outcomes. Nursing interventions should focus on fostering coping mechanisms, facilitating emotional expression, and providing clear education regarding disease management to reduce uncertainty and anxiety. The use of journaling and reflective discussions, as included in the NIC, supports the development of a positive maternal identity and resilience [27].

Role Function and Interdependence Domains: Social and Family Dynamics

The interruption of S.K.'s multiple familial roles due to hospitalization reflects the significant social impact of pregnancy complications. Encouraging family involvement and redefining roles during hospitalization can help maintain self-esteem and social support, crucial for psychological well-being. The supportive presence of her husband and mother is a protective factor, while strained relations with the husband's family present an area for psychosocial intervention. Referral to counseling and social services, as applied in this case, is important in addressing family conflicts and enhancing coping

capacity. Nurses play a key role in facilitating communication, advocating for the patient, and coordinating multidisciplinary care [28, 29].

This case highlights the complexity of nursing care required for women with preeclampsia and demonstrates the utility of Roy's Adaptation Model in structuring comprehensive care plans. Addressing physiological needs while simultaneously supporting psychological adaptation, role functioning, and social relationships can improve outcomes and patient satisfaction. Ongoing education of nursing staff on the multidimensional aspects of preeclampsia and incorporation of patient-centered care principles are recommended. Future research could focus on evaluating the effectiveness of RAM-based nursing interventions on long-term maternal and neonatal outcomes.

Conclusion

The application of Roy's Adaptation Model provided a structured, multidimensional framework for delivering nursing care that simultaneously addressed physical symptoms, psychological well-being, social roles, and interpersonal relationships in a complex high-risk pregnancy. Through carefully selected NANDA diagnoses, measurable NOC outcomes, and evidence-based NIC interventions tailored to S.K.'s unique circumstances, nursing care facilitated her adaptation across all four modes. This integrative approach contributed significantly to improved health outcomes, enhanced psychological resilience, and strengthened social support, underscoring the value of RAM in contemporary maternal nursing practice.

Roy's Adaptation Model (RAM) was found to be effective in enhancing the physical, psychosocial, and emotional well-being of women diagnosed with preeclampsia during pregnancy. By offering individualized care plans, promoting psychosocial support, and encouraging family involvement, this model facilitates adaptation to the challenges experienced during pregnancy. The use of RAM throughout pregnancy contributes to the development of women's coping mechanisms, supports their adjustment to new roles, and improves overall health outcomes. Integrating RAM into nursing practice is essential to support pregnant women's adaptation to physiological and psychological changes and potential complications they may face. It is recommended that nurses receive training on the use of theoretical models and that they develop, implement, monitor, and revise individualized care plans based on appropriate models for each patient. Furthermore, digitalization of RAM and similar nursing models would enhance accessibility for nurses, facilitating more widespread and efficient use in clinical settings.

In addition to supporting physical health, RAM facilitates the patient's adjustment to new social roles and responsibilities that accompany motherhood. It aids in identifying disruptions in role function and interpersonal relationships, allowing nurses to implement timely interventions to strengthen social support systems. Addressing these psychosocial elements is essential, as they significantly impact maternal anxiety and overall well-being, especially in high-risk pregnancies such as those complicated by preeclampsia.

The integration of RAM into standard nursing practice is imperative for the delivery of individualized, evidence-based care. Providing nurses with education and training on the application of theoretical models like RAM enhances their ability to develop, implement, monitor, and revise tailored care plans that respond dynamically to each patient's evolving needs. This approach ensures a higher quality of care and supports more successful adaptation to both physiological and psychological challenges during pregnancy.

Furthermore, in an era of rapid technological advancement, digitizing RAM and similar nursing models holds great promise for increasing accessibility and usability in clinical settings. Digital tools could facilitate real-time patient assessments, streamline care planning, and improve interdisciplinary communication, thereby enhancing the efficiency and effectiveness of nursing interventions. Integrating RAM into electronic health record systems and decision-support platforms would also enable systematic monitoring of patient adaptation and health outcomes.

In summary, Roy's Adaptation Model provides a valuable, multidimensional framework that addresses the complex needs of pregnant women with preeclampsia. Its application supports improved health outcomes and enhances quality of life for both mother and child. Future research should explore broader implementation of RAM in diverse clinical contexts, the development of digital platforms to support its application, and ongoing educational initiatives to equip nurses with the skills needed to effectively employ theoretical models in practice. Such endeavors will advance maternal healthcare and optimize nursing care delivery for high-risk pregnancies worldwide.

References

1. Rowe, S., Karkhaneh, Z., MacDonald, I., Chambers, T., Amjad, S., Osornio-Vargas, A., Chari, R., Kumar, M., & Ospina, M. B. Systematic review of the measurement properties of indices of prenatal care utilization. *BMC Pregnancy and Childbirth*, 2020;20,171. <https://doi.org/10.1186/s12884-020-2822-5>
2. Konnyu, K. J., Danilack, V. A., Adam, G. P., Peahl, A. F., Cao, W., & Balk, E. M. Changes to prenatal care visit frequency and telehealth: A systematic review of qualitative evidence. *Obstetrics & Gynecology*, 2023;141(2):299–323. <https://doi.org/10.1097/AOG.0000000000005046>
3. World Health Organization. (2022). Recommendations on antenatal care for a positive pregnancy experience. <https://www.who.int/publications/i/item/9789241549912>
4. Aydın, N., & Tüfekci, F. G. (2021). Prenatal care and nursing approaches in pregnancy. *Journal of Women's Health*, 6(2), 134–142.
5. Goldenberg, R. L., McClure, E. M., Bhutta, Z. A., Belizán, J. M., Reddy, U. M., & Rubens, C. E. (2011). Stillbirth: epidemiology and overview of the evidence review. *BMC Pregnancy and Childbirth*, 11(Suppl 1), S2.
6. American College of Obstetricians and Gynecologists (ACOG). (2020). Hypertension in pregnancy. Practice Bulletin No. 222. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2020/06/gestational-hypertension-and-preeclampsia>

7. Sibai, B. M., & Stella, C. L. (2009). Diagnosis and management of atypical preeclampsia-eclampsia. *American Journal of Obstetrics and Gynecology*, 200(5), 481.e1–481.e7.
8. Redman, C. W., & Sargent, I. L. (2005). Latest advances in understanding preeclampsia. *Science*, 308(5728), 1592–1594.
9. Steegers, E. A., von Dadelszen, P., Duvekot, J. J., & Pijnenborg, R. (2010). Pre-eclampsia. *The Lancet*, 376(9741), 631–644.
10. Jung, E., Romero, R., Yeo, L., Gomez-Lopez, N., Chaemsaitong, P., Jaovisidha, A., & Erez, O. (2022). The etiology of preeclampsia. *American Journal of Obstetrics and Gynecology*, 226(2 Suppl), S844–S866. <https://doi.org/10.1016/j.ajog.2021.11.1356>
11. Roberts, J. M. (2024). Preeclampsia epidemiology(ies) and pathophysiology(ies). *Best Practice & Research Clinical Obstetrics & Gynaecology*, 94, 102480. <https://doi.org/10.1016/j.bpobgyn.2024.102480>
12. Duley, L. (2009). The global impact of pre-eclampsia and eclampsia. *Seminars in Perinatology*, 33(3), 130–137.
13. ACOG Committee Opinion No. 623. (2015). Emergent therapy for acute-onset, severe hypertension during pregnancy and the postpartum period. *Obstetrics & Gynecology*, 125(6), 1467–1470.
14. Chang, K.-J., Seow, K.-M., & Chen, K.-H. (2023). Preeclampsia: Recent advances in predicting, preventing, and managing the maternal and fetal life-threatening condition. *International Journal of Environmental Research and Public Health*, 20(4), 2994. <https://doi.org/10.3390/ijerph20042994>
15. World Health Organization (WHO). (2025). Global and regional causes of maternal deaths 2009–20: A WHO systematic analysis. *Lancet Global Health*. <https://www.who.int/news-room/fact-sheets/detail/pre-eclampsia>
16. Chojenta, C., Loxton, D., & Mishra, G. (2017). The psychosocial impact of pregnancy complications: a systematic review. *Journal of Psychosomatic Obstetrics & Gynecology*, 38(2), 123–132.
17. Özkarman, A., Özer, S., & Balcı Alpaslan, G. (2012). Use of the Roy Adaptation Model in nursing care of a patient with rheumatoid arthritis. *Gümüşhane University Journal of Health Sciences*, 1(3), 138–144.
18. Kacaroglu Vicdan, A., & Gülseven Karabacak, B. (2014, October). Roy Adaptation Model among nursing models. *Acıbadem University Journal of Health Sciences*, 5(4), 255–259.
19. Sert, E., Erkal, Y., & Tuna Oran, N. (2014). The use of the Roy Adaptation Model in antenatal evaluation in midwifery. *Gümüşhane University Journal of Health Sciences*, 3(4), 1147.
20. Aydın, E. İ., Dikmen, R., & Şahin, S. (2024). Nursing care applied to a woman in the postpartum period based on Roy's Adaptation Model: A case report. *Journal of Women's Health Nursing*, 10(3), 195–209.
21. Çiçek, E., & Karagözoğlu, Ş. (2024). Nursing care applied during pregnancy based on Roy's Adaptation Model: A case report. *Cumhuriyet University Journal of Health Sciences*, 9(1), 115–123. <https://doi.org/10.51754/cusbed.1377291>
22. Barış, N., Gülseven Karabacak, B., & Ecevit Alpar, Ş. (2015). Nursing care plan according to the Roy Adaptation Model. *Ege University Journal of Nursing Faculty*, 31(2), 130–139.
23. Roy Adaptation Association. (2025). Roy Adaptation Model. Mount Saint Mary's University. <https://www.msmu.edu/about-the-mount/nursing-theory/roy-adaptation-association/>
24. Yoldaş, G., Yıldırım, Y., Fadiloğlu, Ç., & Şenuzun Aykar, F. (2019). A nursing approach based on the Roy Adaptation Model in a patient with essential hypertension. *Turkish Journal of Cardiovascular Nursing*, 10(21), 33–39. <https://doi.org/10.5543/khd.2019.63626>

25. Cheng, H. Y., Chen, C. H., & Hsu, L. L. (2019). Pain management and psychological well-being in women with preeclampsia: A review. *Journal of Obstetric Nursing*, 44(3), 150–159. <https://doi.org/10.1016/j.jogn.2019.03.004>
26. Dunkel Schetter, C. (2011). Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues. *Annual Review of Psychology*, 62, 531–558. <https://doi.org/10.1146/annurev.psych.031809.130727>
27. Marcus, S. M., Flynn, H. A., Blow, F. C., & Barry, K. L. (2018). Cognitive-behavioral therapy and anxiety reduction during pregnancy: A systematic review. *Archives of Women's Mental Health*, 21(1), 45–53. <https://doi.org/10.1007/s00737-017-0749-0>
28. Leahy-Warren, P., & McCarthy, G. (2011). Maternal adjustment and maternal support during the transition to motherhood: The role of social support. *Journal of Clinical Nursing*, 20(11–12), 1704–1713. <https://doi.org/10.1111/j.1365-2702.2010.03589.x>
29. Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2012). First-time mothers: Social support, maternal parental self-efficacy and postnatal depression. *Journal of Clinical Nursing*, 21(3–4), 388–397. <https://doi.org/10.1111/j.1365-2702.2011.03701.x>

TABLES

Table 1. The Case's Socio-Demographic and Obstetric Characteristics

Descriptive Characteristics
Name: S.K.
Age: 31 years
Education Level: Associate Level
Blood Type: B Rh (+)
Duration of Marriage: 8 years
Family Type: Nuclear family
Economic Status: Moderate (income equals expenses)
Pregnancy Types: Planned
Obstetric History
Gravida: 2
Para: 0
Abortus: 1
Current pregnancy week: 29 weeks
Previous birth history: The patient stated that her first pregnancy ended with a miscarriage.

Table 2. The Case's Laboratory Test Results

Test Name	Results	Reference Range
Sodium (Na)	133.7	136- 145 mmol/L
Gamma Glutamyl Transferase	4	6- 42 U/L
Bilirubin (Total)	0.15	0.2- 1.2 mg/dL
Specific Gravity	1.031	1.010- 1.030
Urea	23.5	16.6- 48.5 mg/ dL
Glucose	89.3	74- 109 mg/ dL
Creatinine	0.69	0.40- 0.90 mg/ dL
Hemoglobin (HBG)	11.9	10.9-14.3 g/dL
Hematocrit (HCT)	35.0	35.5- 45.5 %
Erythrocytes (RBC)	4.16	3.9-5.2 x10 ⁶ /mm ³
Leukocytes (WBC)	16.17	3.9-10.2 x10 ³ /uL

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