

Case Report: High-Risk Factors in an Elderly Primigravida with Dwarfism and Chronic Energy Deficiency at Ngariboyo Community Health Center

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ABSTRACT

High-risk pregnancy in elderly primigravida with dwarfism and Chronic Energy Deficiency (CED) presents complex challenges due to anatomical constraints and nutritional insufficiency. This case report describes the midwifery care provided to a 36-year-old primigravida with dwarfism (height 136 cm) and CED at Ngariboyo Community Health Center, Magetan Regency. This study aims to comprehensively describe the clinical condition and midwifery management of a high-risk pregnancy involving advanced maternal age, dwarfism, and CED through the Continuity of Care approach. Mrs. K, a 36-year-old primigravida at 22 weeks gestation with G1P00000, presented with dwarfism (height 136 cm), pre-pregnancy BMI of 17.60 kg/m², and MUAC of 20 cm indicating CED. The KSPR score of 10 classified her as high-risk. Comprehensive antenatal care was delivered through five home visits from January to April 2026. Interventions: Midwifery management included nutritional education emphasizing high-calorie and high-protein foods, complementary therapies (lime water, acupressure, relaxation techniques, aromatherapy), family-centered care with husband involvement, interprofessional collaboration, and delivery planning through the P4K program. Over the monitoring period, the patient showed significant improvement evidenced by weight gain from 33.95 kg to 39 kg (total gain 6.5 kg), MUAC increase from 20 cm to 22 cm, resolution of dizziness, fatigue, and constipation complaints, improved appetite and dietary patterns, and stable maternal and fetal conditions. Fetal growth progressed with estimated fetal weight increasing from 465 grams to 2,323 grams. The Continuity of Care approach incorporating nutritional interventions, family support, complementary therapies, and comprehensive monitoring proved effective in improving maternal nutritional status and maintaining maternal-fetal well-being throughout pregnancy in this complex high-risk case. **Keywords:** Elderly primigravida, Dwarfism, Chronic energy deficiency, High-risk pregnancy, Continuity of care

INTRODUCTION

Pregnancy is a physiological process that begins with conception and culminates in fetal delivery, necessitating continuous monitoring to safeguard both maternal and fetal well-being. Within midwifery practice, pregnancies do not invariably proceed without complications, as they may be accompanied by various risk factors that potentially give rise to adverse outcomes. High-risk pregnancy is defined as a gestational condition accompanied by specific factors that elevate the likelihood of health disturbances during pregnancy through the delivery process. These risk determinants may originate from maternal conditions including age, nutritional status, and physical characteristics such as height.^(1,2)

One condition associated with extremely short stature is dwarfism, medically classified as skeletal dysplasia, which represents a genetic disorder affecting bone growth and development, resulting in height significantly below population averages. This condition can adversely affect pregnancy due to anatomical constraints including a narrowed pelvic cavity and other physiological disturbances. Consequently, pregnancies occurring in women with dwarfism are categorized as high-risk gestations necessitating specialized attention and comprehensive management approaches.^(1,3)

On an international scale, pregnancies among women presenting with dwarfism or short stature demonstrate elevated complication rates compared to the general obstetric population. Research evidence indicates that women diagnosed with skeletal dysplasia face increased risks of preterm delivery, with incidence rates reaching 26.4% of total live births. Furthermore, this condition is associated with respiratory complications, challenges in anesthesia administration, and an increased requirement for operative delivery interventions. These findings underscore that

pregnancy in women with dwarfism constitutes a high-risk condition demanding specialized consideration within maternal health services.^(4,5)

Within the Indonesian context, data derived from the Indonesian Health Profile published by the Ministry of Health reveals that high-risk pregnancies remain a predominant challenge in maternal health. Risk factors including Chronic Energy Deficiency (CED), anemia, and maternal height below normal parameters continue to be widely prevalent. Statistical evidence demonstrates that CED prevalence among pregnant women persists within the range of 8–10%, contributing to elevated pregnancy complication risks. At the provincial level in East Java, maternal health issues remain a significant concern, while in Magetan Regency, CED prevalence among pregnant women in 2023 reached 8.36%, indicating that pregnancy risk factors remain considerably high at the district level.^(6–8)

Beyond these statistical indicators, multiple investigations conducted in Indonesia have demonstrated that maternal height and nutritional status exert significant influence on pregnancy outcomes and neonatal well-being. Research by Aneka et al. reported that women with short stature face increased risks of delivery complications, including cephalopelvic disproportion (CPD).⁽⁹⁾ Similarly, Paruhum Tiruon Ritonga et al. (2024) asserted that short stature accompanied by Chronic Energy Deficiency (CED) may elevate the risk of fetal growth disturbances and suboptimal neonatal outcomes.⁽¹⁰⁾

Pregnancy in women with dwarfism can precipitate various complications, including cephalopelvic disproportion (CPD), respiratory compromise, and difficulties during the delivery process, consequently resulting in most deliveries being performed via cesarean section to mitigate complication risks. These risks are further amplified when accompanied by additional conditions such as CED, anemia, and maternal age exceeding 35 years, which may contribute to preterm delivery, low birth weight, and fetal growth restriction. This constellation of factors demonstrates that pregnancy with dwarfism represents a complex high-risk gestational state.^(1,2)

The Indonesian government has implemented various initiatives to reduce pregnancy-related risks through integrated antenatal care (ANC) programs, early high-risk detection, and nutritional interventions for pregnant women. Antenatal services aim to monitor maternal and fetal conditions while detecting complications at the earliest possible stage, thereby enabling appropriate management strategies. These programs are anticipated to reduce maternal morbidity and mortality rates, although management of specific cases such as dwarfism has yet to become a primary focus within health policy frameworks.^(3,11)

Comprehensive management of pregnancies in women with dwarfism necessitates early risk factor identification from the initial stages of gestation, intensive antenatal monitoring, and a multidisciplinary approach involving healthcare professionals. Additionally, nutritional status surveillance is essential to prevent CED, alongside appropriate delivery planning to minimize complication risks. Risk-based and integrated midwifery care is indispensable for enhancing maternal and neonatal safety while optimizing pregnancy outcomes.^(1,2)

This study aims to comprehensively describe a high-risk pregnancy case involving a primigravida aged over 35 years presenting with Chronic Energy Deficiency (CED) and dwarfism (height 136 cm), encompassing the maternal clinical condition and the implementation of midwifery care provided throughout the gestational period. The specific objectives of this case report are as follows: (1) to describe subjective data obtained from the pregnant woman with high-risk factors including advanced-age primigravida, dwarfism, and CED; (2) to describe objective findings from the pregnant woman presenting with high-risk factors of advanced-age primigravida, dwarfism, and CED; (3) to describe the analysis of subjective data concerning the pregnant woman with high-risk factors of advanced-age primigravida, dwarfism, and CED; and (4) to describe the management provided to the pregnant woman with high-risk factors of advanced-age primigravida, dwarfism, and CED.

METHODS

Research Design

This study employed a case report design aimed at comprehensively describing the clinical condition of a pregnant woman with high-risk factors encountered directly in midwifery practice. The case report approach involved comprehensive assessment, diagnosis establishment, care implementation, and outcome evaluation throughout the gestational period.

Time and Location

The case was collected from January to April 2026 at Ngariboyo Primary Health Center, Magetan Regency, with home visits conducted to the patient's residence in Bangsri Village, Ngariboyo Subdistrict.

Study Subject

The subject was Mrs. K, a 36-year-old primigravida at 22 weeks of gestation with obstetric status G1P00000. The patient was diagnosed with high-risk pregnancy accompanied by dwarfism (height 136 cm) and Chronic Energy Deficiency (CED) based on upper arm circumference measurement below 23.5 cm and body mass index below 18.5 kg/m². Subject selection was performed using judgment sampling based on the patient's clinical presentation and risk factor profile. The case was selected as it represented a complex high-risk pregnancy requiring comprehensive midwifery management.

Midwifery Management (SOAP)

The care process was documented using the SOAP framework (Subjective, Objective, Assessment, Plan) as follows:

- 1) Subjective Data: Obtained through anamnesis covering primary complaints including easy fatigability, dizziness, dietary patterns, rest patterns, daily activities, ANC visit history, and knowledge of pregnancy danger signs.
- 2) Objective Data: Obtained through physical examination including vital signs, anthropometric measurements (height, weight, MUAC, BMI), hemoglobin levels, general and obstetric examination, and fetal well-being assessment.
- 3) Assessment: The patient was diagnosed with G1P00000, 22 weeks gestation, high-risk pregnancy due to advanced maternal age (>35 years), dwarfism, and Chronic Energy Deficiency (CED).
- 4) Plan: Management included health education regarding nutritional fulfillment (high-energy and high-protein foods), activity and rest regulation, personal hygiene maintenance, explanation of physiological changes during the second trimester, identification of pregnancy danger signs, delivery planning through the P4K program, and scheduling of subsequent antenatal visits for ongoing monitoring.

Ethical Considerations

Informed consent was obtained from the patient after providing comprehensive explanation regarding the purpose, procedures, benefits, potential risks, and alternative actions available. The patient provided voluntary consent without coercion prior to the implementation of midwifery care.

RESULTS

Case Overview

This case report presents the midwifery care provided to Mrs. K, a 36-year-old primigravida at 22 weeks of gestation with high-risk pregnancy characterized by dwarfism (height 136 cm) and Chronic Energy Deficiency (CED). The patient was selected as a subject due to her complex risk profile, including advanced maternal age (>35 years), extremely short stature, and nutritional insufficiency. Comprehensive antenatal care was delivered through five home visits from January to April 2026 at Ngariboyo Primary Health Center and the patient's residence in Bangsri Village, Magetan Regency.

Initial Assessment Findings

Subjective data

The patient reported decreased appetite over the past four weeks, accompanied by dizziness and weakness for two weeks prior to the initial visit. Laboratory examination revealed normal hemoglobin levels (12.6 g/dL). The patient had a history of helminthiasis during adolescence, which had been treated with six-monthly deworming medications, though she remained underweight. Family history revealed that the patient's father had dwarfism. The patient expressed anxiety regarding potential fetal growth restriction, low birth weight, and inheritance of short stature.

Regarding daily habits, the patient previously consumed irregular meals, frequently skipped breakfast, and had low food intake due to early satiety. She disliked fish, rarely consumed rice, preferred cassava and instant noodles, and avoided milk. During pregnancy, her eating pattern improved to 3-4 meals daily with moderate

portions. She reported urinating 7-8 times daily with increased frequency at night, and bowel movements once daily with occasional lower abdominal discomfort.

Objective data

Vital signs and anthropometry:

- Blood pressure: 115/75 mmHg
- Pulse: 88 x/minute
- Respiratory rate: 20 x/minute
- Temperature: 36.7°C
- Height: 136 cm
- Pre-pregnancy weight: 32.40 kg
- Current weight: 33.95 kg (weight gain: 1.55 kg)
- BMI: 17.60 kg/m² (underweight)
- MUAC: 20 cm (indicating CED)

Physical examination:

- Facial features: Prominent forehead (frontal bossing), slightly flattened midface, prominent jaw
- Nose: Saddle nose deformity
- Neck: Short appearance
- Chest: Narrow appearance
- Extremities: Shorter than normal body proportions consistent with dwarfism
- No edema, no pallor, no thyroid enlargement

Obstetric examination:

- Fundal height: 15 cm (at umbilicus level)
- Estimated fetal weight: 465 grams
- Fetal heart rate: 136 x/minute (regular, strong)
- Pelvic measurement: Pelvic circumference 79 cm, distansia spinarum 21 cm, distansia cristarum 25 cm, conjugata externa 22 cm
- Presentation: Cephalic, back on left side

Risk assessment:

- Poedji Rochjati Score: 10 (High-risk pregnancy)
- Risk factors: Age >35 years (score 4), height <145 cm (score 4), initial score 2
- Preeclampsia screening: Positive for age ≥35 years
- Bleeding risk screening: Positive for age >35 years

Follow-up Visits

Visit 2 (March 8, 2026) - 27 weeks gestation

Subjective:

The patient reported intermittent dizziness with reduced weakness due to improved appetite following nutritional education. She could recall previously provided information regarding meal planning, lime water preparation, acupressure, relaxation techniques, and mint aromatherapy.

Objective:

- Blood pressure: 110/75 mmHg, Pulse: 88 x/min, Respiratory rate: 20 x/min, Temperature: 36.6°C
- Current weight: 37.50 kg (total weight gain: 5 kg from pre-pregnancy)
- MUAC: 20 cm
- Hemoglobin: 11.5 g/dL
- Fundal height: 24 cm (one finger above umbilicus)
- Estimated fetal weight: 1,860 grams

Assessment:

G1P00000, 36 years, 27 weeks gestation, singleton live fetus, cephalic presentation, high-risk pregnancy with dwarfism and CED, Cephalopelvic Disproportion (CPD), good maternal and fetal condition.

Interventions:

- Informed patient of good examination results
- Explained intermittent dizziness may be due to late-night sleeping and CED; advised earlier bedtime
- Encouraged continued aromatherapy, acupressure, and warm compresses
- Provided activity education including 1-2 hours daytime rest, 7-9 hours nighttime sleep, avoiding prolonged floor sitting, avoiding crossed legs, and avoiding heavy lifting
- Provided nutritional education emphasizing high-calorie and high-protein foods (animal and plant proteins), reducing sugary foods, instant noodles, and MSG-containing snacks; advised milk consumption once daily; small frequent meals; additional 300 calories daily for CED recovery
- Reviewed delivery planning (P4K) preparations
- Evaluated medication compliance
- Provided one-month food intake checklist
- Scheduled next visit

Visit 3 (March 15, 2026) - 28 weeks gestation**Subjective:**

The patient reported occasional dizziness, particularly when meals were delayed or after prolonged activity, though frequency had decreased. Fatigue was reduced with improved appetite and more regular eating patterns. She attempted earlier bedtimes but occasionally stayed up late helping her husband with weaving.

Objective:

- Blood pressure: 120/70 mmHg, Pulse: 89 x/min, Respiratory rate: 20 x/min, Temperature: 36.6°C
- Current weight: 37.55 kg (total weight gain: 5.05 kg)
- MUAC: 20.5 cm
- Fundal height: 24.5 cm (two fingers above umbilicus)
- Estimated fetal weight: 1,937 grams

Assessment:

G1P00000, 36 years, 28 weeks gestation, singleton live fetus, cephalic presentation, high-risk pregnancy with dwarfism and CED with fatigue complaints, CPD, fundal height discrepancy with gestational age, good maternal and fetal condition.

Interventions:

- Informed patient of good examination results
- Evaluated persistent dizziness and fatigue; explained causes related to incomplete CED recovery, delayed meals, or excessive activity
- Advised regular meal consumption without delaying mealtimes
- Encouraged continued acupressure, relaxation, ginger aromatherapy, and adequate rest
- Reinforced nutritional education (high-calorie and high-protein foods, small frequent meals, milk consumption, reducing instant noodles)
- Evaluated activity and rest patterns; reinforced maintaining adequate rest
- Checked medication compliance
- Scheduled next visit

Visit 4 (March 29, 2026) - 30 weeks gestation**Subjective:**

The patient reported dizziness was rarely experienced and only occurred occasionally when meals were delayed. Fatigue had decreased compared to previous visits. Appetite had significantly improved with regular 3 meals daily

plus snacks. She regularly consumed high-calorie and high-protein foods, drank milk daily, and had developed a taste for fish. She reported constipation with bowel movements every 2 days requiring straining.

Objective:

- Blood pressure: 115/75 mmHg, Pulse: 89 x/min, Respiratory rate: 20 x/min, Temperature: 36.5°C
- Current weight: 38.56 kg (total weight gain: 6.06 kg)
- MUAC: 22 cm
- Fundal height: 26 cm (three fingers above umbilicus)
- Estimated fetal weight: 2,170 grams

Assessment:

G1P00000, 36 years, 30 weeks gestation, singleton live fetus, cephalic presentation, high-risk pregnancy with dwarfism and CED, constipation complaint, CPD, good maternal and fetal condition.

Interventions:

- Informed patient of good examination results
- Explained constipation causes (insufficient fluid and fiber, uterine pressure on colon, reduced physical activity) and management (increased water intake, high-fiber foods including papaya, light exercise)
- Evaluated dietary patterns; reinforced high-calorie and high-protein nutrition for CED recovery
- Advised maintaining adequate rest and avoiding excessive activity
- Checked medication compliance
- Scheduled next visit

Visit 5 (April 5, 2026) - 30 weeks gestation**Subjective:**

The patient reported no complaints. Dizziness was no longer experienced, and she felt more energetic. Bowel movements were regular (once daily) with soft consistency after increasing water intake and consuming papaya, vegetables, and fruits daily. Appetite was good with regular 3 meals daily plus snacks. She regularly consumed high-calorie and high-protein foods including fish, eggs, chicken, tempeh, tofu, and milk daily. Sleep patterns were regular (8 hours nighttime, 1 hour daytime rest).

Objective:

- Blood pressure: 125/70 mmHg, Pulse: 88 x/min, Respiratory rate: 20 x/min, Temperature: 36.6°C
- Current weight: 39 kg (total weight gain: 6.5 kg)
- MUAC: 22 cm
- Fundal height: 26.4 cm (three fingers above umbilicus)
- Estimated fetal weight: 2,323 grams

Assessment:

G1P00000, 36 years, 30 weeks gestation, singleton live fetus, cephalic presentation, high-risk pregnancy with dwarfism and CED, CPD, risk of low birth weight, good maternal and fetal condition.

Interventions:

- Informed patient of good examination results; patient expressed satisfaction
- Evaluated previous complaints (dizziness, fatigue, constipation); all complaints were resolved
- Reinforced nutritional education for high-calorie and high-protein diet to support fetal growth and maintain maternal weight gain
- Advised maintaining adequate rest, light activity, and avoiding heavy activity
- Checked medication compliance
- Evaluated one-month food checklist; results showed regular consumption of high-calorie and high-protein foods with improved LILA and fetal weight
- Provided education regarding potential complications: Low Birth Weight (LBW), prematurity, obstructed labor due to CPD, hemorrhage during labor and postpartum, and fetal distress. Explained LBW and prematurity care including incubator/warm environment, kangaroo care for hypothermia prevention, and

feeding every 2 hours. Reinforced that cesarean section would be necessary to reduce hemorrhage and fetal distress risks.

- Advised attending integrated ANC at the health center the following week
- Scheduled next antenatal visit

Table 1. Summary of maternal and fetal parameters across visits

Parameter	Visit 1 (23 Jan)	Visit 2 (8 Mar)	Visit 3 (15 Mar)	Visit 4 (29 Mar)	Visit 5 (5 Apr)
Gestational Age	22 weeks	27 weeks	28 weeks	30 weeks	30 weeks
Weight (kg)	33.95	37.50	37.55	38.56	39.00
Weight gain (kg)	1.55	5.00	5.05	6.06	6.50
MUAC (cm)	20.0	20.0	20.5	22.0	22.0
Fundal height (cm)	15.0	24.0	24.5	26.0	26.4
Estimated fetal weight (g)	465	1,860	1,937	2,170	2,323
Hemoglobin (g/dL)	12.6	11.5	-	-	-
Blood pressure (mmHg)	115/75	110/75	120/70	115/75	125/70

DISCUSSION

Overview of Subjective Data Assessment in High-Risk Primigravida with Dwarfism and CED

The subjective data assessment revealed that the patient was a 36-year-old primigravida. Based on her age, she was classified as an elderly primigravida, which constitutes a high-risk pregnancy category. Pregnancies occurring at age 35 years or older carry greater risks for various complications affecting both mother and fetus, including gestational hypertension, fetal growth restriction, and increased likelihood of operative delivery.^(15,16) Beyond age-related factors, the patient presented with a height of 136 cm and a hereditary history of dwarfism inherited from her father. Dwarfism can result in smaller pelvic dimensions compared to average women, thereby increasing the risk of cephalopelvic disproportion and delivery complications. Consequently, the patient required more intensive antenatal monitoring, collaboration with obstetric and gynecology specialists, and comprehensive delivery planning through a Continuity of Care approach.^(9,17)

The primary complaints reported by the patient included decreased appetite over the preceding four weeks, accompanied by dizziness and weakness emerging over the prior two weeks. Despite these symptoms, hemoglobin examination results demonstrated normal values at 12.6 g/dL. This finding indicates that the patient's complaints were not necessarily related to anemia. According to Demsa et al., prolonged insufficient energy and protein intake constitutes the primary cause of Chronic Energy Deficiency (CED) in pregnant women.⁽¹⁸⁾ CED can lead to reduced body energy reserves, causing increased fatigability, weakness, and decreased tolerance for daily activities.^(12,19) Thus, the dizziness and weakness experienced by the patient were more likely attributable to CED rather than anemia. The prolonged decreased appetite also had the potential to worsen the patient's nutritional status, necessitating optimal nutritional management and support.

The patient's medical history revealed factors that could influence nutritional status predating pregnancy. She had a history of helminthiasis during adolescence and reported remaining thin despite receiving treatment and being declared cured. Furthermore, prior to pregnancy, she exhibited poor dietary patterns characterized by skipping breakfast, consuming small portions, rarely eating rice, disliking fish as an animal protein source, and frequently consuming instant noodles. These habits potentially prevented optimal energy and protein fulfillment, thereby increasing CED risk.^(20,21) The long-standing history of nutritional problems combined with unbalanced pre-pregnancy dietary patterns were suspected contributors to the patient's current CED condition.⁽¹⁸⁾

From psychological and sociocultural perspectives, the patient expressed concerns regarding her fetus's condition. She felt anxious about potential fetal growth restriction, low birth weight, nutritional deficiency, or inheritance of her dwarfism condition. Such anxiety represents a common response among women with high-risk pregnancies, particularly when genetic risk factors and nutritional disturbances are present.^(11,16) Additionally, the patient reported easy fatigability and body aches following activity, likely influenced by CED and biomechanical changes resulting from dwarfism.^(12,17) Sociocultural factors also played a role, including family beliefs that excessive eating during pregnancy could lead to a large baby and difficult delivery for a short-statured woman. Moreover, the patient often prioritized other family members' food needs over her own. These habits could impede nutritional fulfillment during pregnancy and potentially worsen maternal nutritional status.^(21,22)

Overview of Objective Data Assessment in High-Risk Primigravida with Dwarfism and CED

Objective data assessment revealed that the patient was 36 years old with a Poedji Rochjati Score Card (KSPR) score of 10, derived from age over 35 years and height below 145 cm. This score classified the patient in the high-risk pregnancy category, necessitating more intensive antenatal monitoring and thorough delivery referral preparation. Advanced maternal age is known to correlate with increased complication risks during pregnancy and delivery for both mother and fetus.^(15,16) Furthermore, the patient's height of only 136 cm reinforced the presence of dwarfism. Height below 145 cm constitutes an obstetric risk factor frequently associated with narrower pelvic dimensions and potential cephalopelvic disproportion during delivery.^(9,23) Therefore, the patient required stricter surveillance throughout pregnancy.

Anthropometric examination demonstrated a pre-pregnancy BMI of 17.60 kg/m², classified as underweight, MUAC of 20 cm, and weight gain of only 1.55 kg at 22 weeks gestation. These findings indicated that the patient was experiencing Chronic Energy Deficiency (CED). According to Fitriah et al.⁽²⁰⁾ and et al.,⁽¹²⁾ BMI below 18.5 kg/m² reflects undernutrition that can increase risks of fetal growth restriction and low birth weight. Additionally, MUAC below 23.5 cm serves as an indicator of CED in pregnant women, associated with increased maternal and neonatal complication risks.^(18,21) Weight gain below recommendations during pregnancy also suggested that energy and protein requirements were not optimally met, necessitating ongoing nutritional intervention.⁽²⁴⁾

Physical examination revealed several characteristic features of dwarfism, including frontal bossing, saddle nose, prominent jaw, short neck, narrow chest, and shorter extremities compared to normal body proportions. These findings align with the clinical presentation of achondroplasia, characterized by bone growth abnormalities and disproportionate body proportions.⁽¹⁷⁾ Pelvic measurement results showed pelvic circumference 79 cm, distansia spinarum 21 cm, distansia cristarum 25 cm, and conjugata externa 22 cm. These findings require particular attention, as women with dwarfism generally have smaller pelvic dimensions, increasing the risk of obstructed vaginal delivery due to cephalopelvic disproportion.^(9,17) Consequently, regular evaluation of maternal condition and delivery planning are essential.

Despite these risk factors, the general condition of mother and fetus remained favorable during examination. Vital signs were within normal limits: blood pressure 115/75 mmHg, pulse 88 beats per minute, respiratory rate 20 breaths per minute, temperature 36.7°C, and MAP 88.3 mmHg, with no evidence of hypertension or infection.^(25,26) Hemoglobin level of 12.6 g/dL also indicated that the patient was not anemic.⁽²⁷⁾ Fetal heart rate of 136 beats per minute, regular and strong, remained within the normal range, reflecting fetal well-being.^(1,24) However, fundal height measurement of 15 cm with estimated fetal weight of 465 grams and abdominal enlargement appearing inconsistent with gestational age warrant attention, as CED can affect fetal growth. Additionally, maternal age over 35 years constitutes a risk factor for preeclampsia and hemorrhage, necessitating continued routine monitoring until delivery.^(16,28)

Overview of Assessment (Data Analysis) in High-Risk Primigravida with Dwarfism and CED

At the initial visit, data analysis revealed that the patient was 36 years old and experiencing her first pregnancy (G1P00000). Based on her age, she was classified as an elderly primigravida, representing a high-risk factor in pregnancy. Pregnancies at age 35 years or older are known to carry greater risks for maternal and perinatal complications compared to healthy reproductive age.^(15,16) Furthermore, the patient had a height of 136 cm with characteristic physical features of dwarfism and a family history of the same condition. These findings supported the diagnosis of dwarfism, which can increase delivery complication risks due to potential pelvic size limitations.^(9,17) Combined with MUAC of 20 cm and BMI of 17.60 kg/m² indicating CED, and a KSPR score of 10 categorizing the patient as high-risk pregnancy, intensive monitoring and referral preparation were required from early pregnancy.⁽²⁹⁾

At the first progress note, evaluation demonstrated positive changes in the patient's condition. Dizziness complaints were still occasionally experienced, but appetite began to improve following nutritional education and interventions. Increased energy intake is known to help improve clinical conditions in pregnant women with CED.⁽¹²⁾ Additionally, the patient's weight increased from 33.95 kg to 37.50 kg, indicating nutritional status improvement.⁽²⁰⁾ Hemoglobin examination results remained within normal limits at 11.5 g/dL, confirming that persistent dizziness was not related to anemia.⁽²⁷⁾ Fetal heart rate and vital signs also remained within normal ranges, indicating stable fetal condition.⁽²⁴⁾ Nevertheless, the CED diagnosis was maintained as nutritional problems had not been fully resolved and continued monitoring was required.⁽²¹⁾

At the second progress note, dizziness complaints had further decreased, although the patient still reported easy fatigability during activities. This condition can still be observed in women with CED undergoing nutritional

status recovery.⁽¹⁹⁾ Examination results showed MUAC improvement to 20.5 cm and weight increase to 37.55 kg, indicating gradual nutritional improvement.⁽¹⁸⁾ Vital signs and fetal condition remained stable, with no obstetric complications detected during monitoring.⁽²⁶⁾ Based on data analysis, the diagnosis was updated to dwarfism with CED accompanied by easy fatigability complaints, as the primary issue still experienced was decreased activity tolerance due to incompletely recovered nutritional status.⁽³⁰⁾

At the third progress note, the patient's condition showed increasingly evident improvement. Dizziness complaints were almost completely absent, and appetite continued to improve. MUAC increased to 22 cm and weight reached 38.56 kg, indicating that nutritional interventions were beginning to yield optimal results.^(1,12) These improvements reflected better body energy reserves and nutritional status. However, a new complaint emerged: constipation characterized by hard bowel movements requiring straining. This complaint is common in late trimester pregnancies due to hormonal influences and increasing uterine pressure on the intestines.⁽²⁵⁾ Despite this complaint, the general condition of mother and fetus remained good, with no signs of obstetric complications detected during monitoring.⁽²⁴⁾

At the fourth progress note, evaluation results showed that all previously reported complaints, dizziness, easy fatigability, and constipation, were no longer present. Resolution of these complaints indicated that the midwifery care provided elicited a positive response to the patient's condition.⁽¹⁾ The patient's weight increased to 39 kg and MUAC remained stable at 22 cm, demonstrating nutritional status improvement compared to initial condition, although continued monitoring until the end of pregnancy remains necessary.^(12,20) This success was supported by the patient's adherence to consuming high-calorie and high-protein foods as recommended.⁽¹⁹⁾ Furthermore, vital signs, fundal height, and fetal condition remained within normal limits, so maternal and fetal prognosis was considered good, demonstrating the success of the Continuity of Care approach implemented.⁽²⁶⁾

Overview of Management Effectiveness in High-Risk Primigravida with Dwarfism and CED

The midwifery care provided to the high-risk pregnant woman with elderly primigravida, dwarfism, and Chronic Energy Deficiency (CED) focused on improving nutritional status as the primary issue identified during pregnancy. The midwife provided Communication, Information, and Education (CIE) regarding the importance of nutritional fulfillment and developed simple menus in collaboration with a nutritionist consisting of high-calorie and high-protein foods such as eggs, chicken, meat, tempeh, tofu, and legumes. This approach aligns with CED management recommendations emphasizing increased energy and protein intake through dietary regulation and ongoing nutritional counselling.^(18,29) Additionally, the midwife taught lime water preparation as a non-pharmacological alternative to help improve the patient's appetite. This intervention was considered appropriate as it was easy to implement, affordable, and suitable for the family's socioeconomic conditions.⁽³¹⁾

Beyond nutritional interventions, the midwife applied a family-centered approach by actively involving the husband. The husband was taught acupressure techniques at points ST36, SP6, and PC6 to help improve the patient's comfort and digestive function. According to Kao et al.,⁽³²⁾ stimulation at these points can help reduce complaints related to the digestive system and enhance comfort during pregnancy. The midwife also taught deep breathing relaxation techniques, warm compress application, and mint leaf aromatherapy to reduce dizziness complaints. These complementary therapies are known to provide relaxation effects, reduce tension, and improve comfort in pregnant women without harmful side effects.^(25,33) Family involvement in the care process demonstrated the application of family-centered care, contributing to the success of the intervention.

Health education efforts were also implemented to improve maternal knowledge regarding basic needs during pregnancy, including nutrition, elimination, rest, personal hygiene, and appropriate physical activity. This education aimed to establish better health behaviors, focusing not only on nutritional improvement but also supporting overall maternal and fetal health.^(1,26) The midwife also provided education regarding pregnancy danger signs and advised the patient to seek immediate help if symptoms suggestive of complications appeared. This step was particularly important given that the patient belonged to the high-risk pregnancy group due to advanced maternal age and dwarfism. Enhanced knowledge of danger signs can facilitate early complication detection and reduce delays in accessing healthcare services.^(11,26)

As part of complication prevention efforts, the midwife also conducted education and evaluation of the Delivery Planning and Complication Prevention Program (P4K). This included transportation preparation, potential blood donors, delivery location, and P4K sticker placement as a form of family preparedness for possible complications during pregnancy and delivery. According to Erna Mulati⁽²⁶⁾ and Fatimah et al.,⁽¹⁶⁾ P4K implementation is an important strategy to enhance maternal and family readiness for delivery, especially in high-risk pregnancies. The midwife also collaborated with physicians in providing Multiple Micronutrient Supplements

(MMS) and calcium while monitoring supplementation compliance at each visit. Interprofessional collaboration is necessary to optimize maternal and fetal health and support successful therapy.^(17,24)

Care effectiveness was evaluated through periodic monitoring of weight, upper arm circumference (MUAC), fundal height (TFU), estimated fetal weight (EFW), blood pressure, and maternal and fetal condition at each home visit. Continuous monitoring allowed the midwife to assess nutritional status progression and detect problems as early as possible.^(1,12) To improve adherence to nutritional recommendations, the midwife provided a dietary monitoring checklist evaluated at subsequent visits. The patient also received education regarding safe activity and ergonomics appropriate for her dwarfism condition, such as avoiding prolonged sitting, performing light stretching, and limiting heavy activity. These activity modifications are important to reduce musculoskeletal complaints and prevent excessive fatigue during pregnancy.^(9,17) Overall, the care provided was appropriate for the patient's needs and demonstrated a comprehensive Continuity of Care approach.

CONCLUSION

Subjective data revealed that the patient was a 36-year-old elderly primigravida with hereditary dwarfism, presenting with decreased appetite, easy fatigability, dizziness, poor dietary patterns, and concerns regarding fetal condition, all of which contributed to CED risk and pregnancy complications. Objective data demonstrated that the patient had a height of 136 cm, pre-pregnancy BMI of 17.60 kg/m², MUAC of 20 cm, and a KSPR score of 10, categorizing her as having a high-risk pregnancy. Although general maternal and fetal conditions remained within normal limits, indicators supporting the diagnoses of dwarfism and CED were identified, necessitating specialized monitoring.

Data analysis established the midwifery diagnosis of G1P00000 at 36 years of age with high-risk pregnancy due to elderly primigravida, dwarfism, and CED. Throughout the care process, improvements were observed, as evidenced by enhanced nutritional status, reduced complaints, and stable maternal and fetal conditions until the end of monitoring. The midwifery management provided through the Continuity of Care approach, encompassing nutritional education, nutritional status monitoring, complementary therapies including lime/lemon water, acupressure, family involvement, collaboration with other healthcare professionals, and cesarean section delivery preparation, was proven effective in improving maternal nutritional status, enhancing adherence to health recommendations, and maintaining maternal and fetal well-being throughout pregnancy.

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Competing Interests

All the authors declare that there are no conflicts of interest.

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