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PERCEIVED FACTORS RELATED TO CHRONIC ENERGY DEFICIENCY RISK AMONG A PREGNANT WOMAN AND YOUNG WOMEN IN BAGAN PERCUT VILLAGE: A QUALITATIVE STUDY

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ABSTRACT

Chronic energy deficiency (CED) threatens maternal health and the next generation. This qualitative descriptive study explored experiences and perceived factors related to CED risk in Bagan Percut Village, Percut Sei Tuan District, in January 2026. Four purposively selected informants, one pregnant woman and three unmarried young women aged 16-20 years, took part in in-depth interviews; mid-upper arm circumference (MUAC) was below 23.5 cm in three of them. Data were analyzed through data reduction, display and conclusion drawing. Four themes emerged: irregular and insufficient eating, economic constraints, irregular iron tablet use, and limited nutrition knowledge with little perceived education or monitoring. These themes describe the informants' perspectives only and cannot establish causes of CED.

Keywords: *Chronic energy deficiency, Pregnant women, Young women, Mid-upper arm circumference, Qualitative study*

ABSTRAK

Kekurangan energi kronik (KEK) mengancam kesehatan ibu dan generasi berikutnya. Penelitian kualitatif deskriptif ini menggali pengalaman dan faktor yang dipersepsikan terkait risiko KEK di Desa Bagan Percut, Kecamatan Percut Sei Tuan, pada Januari 2026. Empat informan yang dipilih secara purposif, yaitu satu ibu hamil dan tiga perempuan muda belum menikah berusia 16-20 tahun, diwawancarai secara mendalam; LILA tiga di antaranya di bawah 23,5 cm. Data dianalisis melalui reduksi, penyajian, dan penarikan kesimpulan. Empat tema muncul: makan tidak teratur dan tidak cukup, keterbatasan ekonomi, konsumsi tablet tambah darah tidak teratur, serta pengetahuan gizi terbatas dengan edukasi dan pemantauan yang jarang dirasakan. Tema ini hanya menggambarkan perspektif informan dan tidak membuktikan penyebab KEK.

Kata Kunci: Kekurangan energi kronik, Ibu hamil, Perempuan muda, LILA, Penelitian kualitatif.

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1. INTRODUCTION

Chronic energy deficiency (CED) is a state of undernutrition caused by long-term inadequate intake of energy and protein, and in Indonesia it is screened by a mid-upper arm circumference (MUAC) below 23.5 cm in women of reproductive age, including pregnant women (Badan Pusat Statistik [BPS], n.d.). CED during pregnancy is associated with maternal anemia (Erina et al., 2025), and maternal CED has been linked to stunting in the next generation (Zahra & Prasetyowati, 2026). Maternal undernutrition remains a persistent problem in low- and middle-income countries (Victora et al., 2021).

In Indonesia, the 2018 Basic Health Research survey recorded CED risk in 17.3% of pregnant and 14.5% of non-pregnant women of reproductive age, with higher risk among younger women (Kementerian Kesehatan Republik Indonesia [Kemenkes RI], 2018). School-based studies of adolescent girls report widely varying proportions with MUAC below 23.5 cm, from 22% in a junior high school in Makassar (Wirawanti, 2022) to 56.2% in a vocational school in Pinrang (Munawara et al., 2023), and adolescent girls with CED in the Makassar study all had anemia.

Quantitative studies have associated CED with dietary intake, nutrition knowledge, family income and body image (Nadrah et al., 2024; Anwar et al., 2025; Fitriany et al., 2026; Irma et al., 2026; Nugroho et al., 2026), although findings differ between settings (Munawara et al., 2023). These studies measure associations but say little about how women themselves experience eating, money, iron tablets and health services. Qualitative accounts that place pregnant women and young women from the same village side by side are rare. This study therefore explored the experiences and perceived factors related to CED risk among a pregnant woman and young women in Bagan Percut Village, Percut Sei Tuan District.

2. RESEARCH METHOD

This qualitative descriptive study was conducted in Bagan Percut Village, Percut Sei Tuan District, Deli Serdang Regency, in January 2026. Informants were selected purposively: one pregnant woman and three unmarried young women living in the village. Because informant 2 was 20 years old, the term "young women" is used for the non-pregnant group; under the WHO definition, adolescence covers ages 10-19 years (World Health Organization [WHO], n.d.).

Data were collected through face-to-face in-depth interviews. A semi-structured guide covered daily eating patterns, food access and household economy, iron tablet (*tablet tambah darah*, TTD) use, nutrition knowledge, and experiences with health services. Body weight and MUAC were measured for each informant. MUAC below 23.5 cm was used to screen CED risk in both groups (BPS, n.d.). Body mass index-for-age for informants aged 18 years or younger (Peraturan Menteri Kesehatan Nomor 2 Tahun 2020) and body mass index for older informants could not be assessed because height was not recorded.

Informant characteristics and anthropometric measurements were entered and summarized descriptively in IBM SPSS Statistics version 32 (IBM Corp., Armonk, NY, USA). The interview data were analyzed through data reduction, data display and conclusion drawing (Miles et al., 2020). The interview material was read repeatedly and coded; codes were grouped into themes (Braun & Clarke, 2021), and each theme was checked against the coded statements of the informants. With only four informants, data saturation is not claimed; the adequacy of the data was judged by the narrow aim and the depth of the interviews (Malterud et al., 2016; Hennink & Kaiser, 2022). The study followed national research ethics guidelines (Komisi Etik Penelitian dan Pengembangan Kesehatan Nasional [KEPPKN], 2021). All informants gave written informed consent; for informant 3 (16 years), written consent was also obtained from a parent or guardian.

3. RESULT AND DISCUSSION

Results

Table 1 summarizes the informants. Three of the four had MUAC below 23.5 cm: the pregnant woman (I1) and two young women (I3 and I4). I2 had a MUAC of 26 cm, above the screening threshold. Body weight alone did not reflect CED risk; I1 weighed 65 kg and I4 58 kg, yet both had low MUAC.

Table 1. Informant Characteristics

Code	Status	Age (y)	Weight (kg)	MUAC (cm)	CED risk
I1	Pregnant woman	30	65	21.8	Yes
I2	Young woman	20	50	26.0	No
I3	Adolescent girl	16	45	21.0	Yes
I4	Adolescent girl	19	58	22.0	Yes

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Theme 1: Irregular and insufficient eating. I1 described irregular meals, often skipping them because of household and work duties, and eating little animal protein; nausea, poor appetite and fatigue made eating harder. Among the young women, some skipped breakfast, ate snacks more often than home-cooked meals, and ate little protein, vegetables or fruit even though local food was available; they also reported tiredness, weight loss and staying up late. One young woman ate fairly regularly and ate animal protein, but in small portions and with limited food preferences.

Theme 2: Economic constraints. I1 and some of the young women said that family income limited what they could buy, particularly animal protein and fruit.

Theme 3: Irregular iron tablet use. I1 did not take iron tablets regularly because she did not understand their benefits. Some of the young women also did not understand why TTD was needed, while one knew about it but lacked the motivation to take it regularly.

Theme 4: Limited nutrition knowledge and little perceived education or monitoring. I1 said she had received little nutrition education from health workers. Some of the young women did not recognize fatigue or poor appetite as signs of a nutrition problem, and one young woman with low MUAC felt healthy and did not see her MUAC as something to address. These statements reflect the informants' perceptions; the study did not assess the quality of local health services.

Discussion

The four themes show how CED risk was experienced by these informants: eating was irregular and limited, money constrained food choice, iron tablets were taken irregularly, and low MUAC was rarely understood as a problem. Because the study involved one pregnant woman and three young women, the themes describe their perspectives and do not show which factors cause CED or how common they are in the village.

The prominence of irregular and insufficient eating agrees with quantitative studies in which energy, carbohydrate and fat intake were associated with CED among adolescent girls (Munawara et al., 2023; Fitriany et al., 2026) and with reviews that place eating patterns at the center of CED in pregnancy (Anwar et al., 2025; Rahmawati et al., 2026). The informants add context those studies cannot: meals were skipped because of household work for the pregnant woman

and because of snacking, late nights and small portions for the young women.

Low nutrition knowledge has been strongly associated with CED among pregnant women (Nadrah et al., 2024) and adolescent girls (Fitriany et al., 2026), and was examined with physical activity among female students (Erika et al., 2024), but not in every study (Munawara et al., 2023). Similarly, family income was associated with CED in pregnant women in Bone Regency (Irma et al., 2026) but not among students in Pinrang (Munawara et al., 2023). These differences suggest that knowledge and income act through context, which is what qualitative data can help explain. The informants' irregular TTD use is relevant because CED and anemia often coexist in both groups (Wirawanti, 2022; Erina et al., 2025), and adherence among adolescent girls has been linked to their knowledge (Yuniarti et al., 2025). An earlier study in Gorontalo similarly described knowledge, consumption patterns, economy and iron tablet use as factors in CED among pregnant women (Harismayanti & Sabirin, 2021), and case-based care for an adolescent with CED has emphasized dietary counseling (Alia et al., 2024). Body image, examined in several adolescent studies (Chania et al., 2024; Nugroho et al., 2026; Fitriany et al., 2026), did not arise in these interviews and may deserve explicit questions in future work.

The study has clear limitations. It included four informants, only one of whom was pregnant, from a single village, interviewed over one month. The informants' accounts may be shaped by recall and social desirability, no dietary intake was measured, and MUAC was measured once. The findings may be transferable only to settings with similar women and conditions, and the themes should be tested with more and more varied informants, including family members and health workers.

4. CONCLUSION

In Bagan Percut Village, the four informants described irregular and insufficient eating, economic constraints, irregular iron tablet use, and limited nutrition knowledge with little perceived education or monitoring; three of them had MUAC below 23.5 cm. These themes reflect the experiences of one pregnant woman and three young women and cannot establish the causes of CED or judge the quality of health services. They suggest that MUAC screening, practical nutrition counseling and explanation of iron tablets may be

useful topics for village health activities, and that larger qualitative and quantitative studies are needed to confirm them.

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