



KARAKTERISTIK IBU HAMIL DENGAN KEKURANGAN ENERGI KRONIS (KEK) SEBAGAI DASAR PENGUATAN INTERVENSI GIZI MATERNAL DI DESA SUKAMULYA

Silvia Widnyani Heriyanti ^{1*}, Ratna Suminar ², Siti Rohmah ³, Yudita Ingga Hindiarti ⁴

^{1, 2, 3, 4} Program Studi Kebidanan, Fakultas Ilmu Kesehatan Universitas Galuh, Indonesia

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ABSTRAK

Kekurangan Energi Kronis (KEK) pada ibu hamil merupakan masalah kesehatan masyarakat yang meningkatkan risiko berat badan lahir rendah, prematuritas, serta morbiditas dan mortalitas ibu dan bayi. Di Kabupaten Ciamis, prevalensi KEK pada ibu hamil menunjukkan tren peningkatan. Desa Sukamulya dipilih sebagai lokasi penelitian karena masih ditemukannya kasus KEK pada ibu hamil meskipun berada di wilayah dengan akses pelayanan kesehatan dasar yang tersedia, sehingga memerlukan kajian spesifik berbasis komunitas. Penelitian ini bertujuan untuk menggambarkan karakteristik ibu hamil dengan KEK di Desa Sukamulya, Kabupaten Ciamis. Penelitian ini menggunakan desain survei dengan pendekatan deskriptif. Populasi penelitian adalah seluruh ibu hamil dengan KEK di Desa Sukamulya sebanyak 25 orang dengan teknik total sampling. Data dikumpulkan menggunakan kuesioner terstruktur dan dianalisis secara deskriptif dalam bentuk distribusi frekuensi dan persentase. Sebagian besar responden berpendidikan sekolah dasar (36%), berada pada usia 20–35 tahun (44%), berstatus primigravida (64%), dan tidak bekerja (56%). Ibu hamil dengan KEK di Desa Sukamulya umumnya berada pada usia reproduksi sehat, namun didominasi oleh pendidikan rendah, primigravida, dan tidak bekerja. Temuan ini memiliki implikasi praktis sebagai dasar bagi tenaga kesehatan, khususnya bidan, dalam memperkuat edukasi gizi, meningkatkan kualitas pelayanan antenatal sejak dini, serta mengoptimalkan program Pemberian Makanan Tambahan (PMT) yang lebih terarah dan berkelanjutan.

Kata Kunci: kekurangan energi kronis, survei deskriptif, status gizi, ibu hamil

ABSTRACT

Chronic Energy Deficiency (CED) among pregnant women is a public health problem that increases the risk of low birth weight, prematurity, and maternal and neonatal morbidity and mortality. In Ciamis Regency, the prevalence of CED among pregnant women has shown an increasing trend. Sukamulya Village was selected as the study setting due to the continued occurrence of CED cases despite the availability of basic maternal health services, indicating the need for a community-based assessment. This study aimed to describe the characteristics of pregnant women with CED in Sukamulya Village, Ciamis Regency. This study employed a descriptive survey design. The study population consisted of all pregnant women with CED in Sukamulya Village, totaling 25 respondents, using total sampling. Data were collected through a structured questionnaire and analyzed descriptively using frequency and percentage distributions. Most respondents had primary school education (36%), were aged 20–35 years (44%), were primigravida (64%), and were unemployed (56%). Pregnant women with CED in Sukamulya Village were generally within the healthy reproductive age range but were predominantly characterized by low educational level, primigravida status, and unemployment. These findings provide practical implications for health workers, particularly midwives, to strengthen nutritional education, improve early antenatal care services, and optimize targeted and sustainable supplementary feeding programs.

Keywords: Chronic Energy Deficiency, Descriptive Survey, Nutritional Status, Pregnant Women

INTRODUCTION

Chronic Energy Deficiency (CED) among pregnant women constitutes a serious and ongoing global public health problem. This condition has been consistently associated with a range of adverse maternal outcomes, including an increased risk of maternal mortality (Say et al., 2014) anemia (Hellyana, Aritonang, Evawany Y, Sanusi, 2019), compromised immune function (Katona & Katona-Apte, 2008), suboptimal lactation performance (Dewey, 2001), and delayed or impaired wound healing (Sherman & Barkley, 2011).

Beyond its impact on maternal health, CED during pregnancy also poses significant risks to fetal and child outcomes. Evidence shows that maternal CED is strongly linked to preterm birth, low birth weight, restricted fetal growth, and stunting in early childhood. These adverse outcomes contribute to an intergenerational cycle of malnutrition, ultimately affecting long-term adult health, productivity, and the quality of human capital (Aguayo & Menon, 2016; Eshak et al., 2020; Koletzko et al., 2019; Wati et al., 2024).

Despite ongoing global nutrition initiatives, CED commonly referred to as undernutrition remains highly prevalent, particularly in low- and middle-income countries (LMICs). Studies indicate that between 15% and 47% of pregnant women in developing regions are affected by this condition, underscoring persistent inequities in access to adequate nutrition, health services, and social support (Abraham et al., 2015; Branca et al., 2015; Desyibelew & Dadi, 2019; Goswami, 2015; Okube et al., 2022).

In Indonesia, CED among pregnant women remains a significant concern. The 2023 National Basic Health Research (Riskesdas) reported a CED prevalence of 17.3% among pregnant women, while West Java Province recorded a prevalence of 14.08%. (Riskesdas, 2023) (Dinas Kesehatan Provinsi Jawa Barat, 2023) At the district level, data from the Ciamis District Health Office indicated an increase in the prevalence of CED among pregnant women from 48% to 51% in 2024. A similar trend was observed in the working area of Baregbeg Primary Health Center, where the prevalence rose from 7.7% to 8.9% in the same year. These findings suggest that CED remains inadequately addressed, particularly in rural settings. (Dinkes Ciamis, 2024)

Chronic Energy Deficiency during pregnancy is associated with adverse outcomes, including low birth weight (LBW), preterm birth, and increased maternal and neonatal morbidity and mortality. (Selamet et al., 2024) The determinants of CED are multifactorial, encompassing low educational attainment, poor socioeconomic conditions, maternal age, parity, employment status,

and limited access to nutritious food and health information (Pomalingo & Misnati, 2018; W. Widyawati & Sulistyoningtyas, 2020) However, despite the growing body of research examining risk factors and health consequences of CED, studies that specifically describe the characteristics of pregnant women with CED at the community level particularly in rural areas of Ciamis Regency remain very limited. Most existing studies focus on analytical relationships between CED and pregnancy outcomes, rather than providing descriptive community-based profiles that are essential for designing context-specific interventions (Rismawati & Ningrum, 2021).

Efforts to address and prevent the consequences of CED among pregnant women include encouraging regular antenatal care visits from early pregnancy to enable early detection of nutritional deficiencies, along with nutrition counseling tailored to the needs of pregnant women. Nutrition education is expected to improve maternal knowledge and dietary practices during pregnancy. In addition, the Indonesian government has implemented the Supplementary Feeding Program (Pemberian Makanan Tambahan/PMT) to address undernutrition among pregnant women with CED. Despite these initiatives, the persistently high prevalence of CED indicates the need for a deeper understanding of the characteristics of affected pregnant women to inform more effective interventions. (W. Widyawati & Sulistyoningtyas, 2020)

Sukamulya Village in Ciamis Regency is one of the areas experiencing an increasing prevalence of CED among pregnant women. To date, empirical data describing the characteristics of pregnant women with CED in this specific rural context remain limited, which constrains the development of targeted maternal nutrition programs.

Therefore, this study aims to describe the characteristics of pregnant women with Chronic Energy Deficiency (CED) in Sukamulya Village, Ciamis Regency, focusing on maternal age, educational level, parity, and employment status.

This study contributes to the existing body of knowledge by providing community-based evidence on the profile of pregnant women with CED in a rural setting. The findings are expected to support healthcare providers, particularly midwives, in strengthening promotive and preventive efforts, including antenatal care services, nutrition education, and the implementation of targeted supplementary feeding programs.

RESEARCH METHODS

This study employed a quantitative approach using a descriptive survey design. The scope of the

research focused on the characteristics of pregnant women experiencing Chronic Energy Deficiency (CED). The variables observed included age, educational level, parity, and employment status of pregnant women with CED, defined as having a mid-upper arm circumference of less than 23.5 cm. The study was conducted in Sukamulya Village, Ciamis Regency. The population consisted of all pregnant women diagnosed with CED in Sukamulya Village, totaling 25 individuals. A total sampling technique was applied, whereby all eligible respondents were included in the study. Data collection was carried out in November 2025.

The main research instrument was a structured questionnaire developed based on relevant theories and research frameworks. The questionnaire underwent content validity testing through expert judgment involving maternal and child health professionals to ensure that all items adequately represented the measured variables. Reliability testing was also conducted prior to data collection, and the results indicated that the questionnaire was reliable for use in this study. Data were collected through direct interviews and review of measurements recorded in the maternal and child health handbook. Data analysis was performed descriptively and presented as frequency and percentage distributions.

RESEARCH RESULTS AND DISCUSSION

Research Results

This study employed a quantitative approach using a descriptive survey design. The scope of the research focused on the characteristics of pregnant women experiencing Chronic Energy Deficiency (CED). The variables observed included age, educational level, parity, and employment status of pregnant women with CED, defined as having a mid-upper arm circumference of less than 23.5 cm. The study was conducted in Sukamulya Village, Ciamis Regency. The population consisted of all pregnant women diagnosed with CED in the village, totaling 25 individuals, and all were included as samples using a total sampling technique. The main research instrument was a structured questionnaire developed based on relevant theories and research frameworks. Data were collected through direct interviews and review of measurements recorded in the maternal and child health handbook. Data analysis was performed descriptively and presented as frequency and percentage distributions.

Discussion

1. Distribution of Respondents According to Education

Table 1
Distribution of Pregnant Women with Chronic Energy Deficiency by Education

Education	F	%
Primary School	9	36%
Middle School	8	32%
Senior High School	6	24%
College	2	8%
Total	25	100%

Based on Table 1, it shows that of the 25 pregnant women with KEK, the highest education level was elementary school education for 9 people (36%) and the lowest level was mothers with a bachelor's degree for 2 people (8%). This finding indicates that CED is more commonly observed among pregnant women with lower educational attainment, suggesting potential limitations in access to nutrition-related information and health knowledge.

2. Distribution of Respondents by Age

Table 2
Distribution of Pregnant Women with Chronic Energy Deficiency by Age

Age	F	%
<20 years	6	24%
20-35 years	11	44%
>35 years	8	32%
Total	25	100%

Based on Table 2, it shows that of the 25 pregnant women with KEK, the highest age group was in the 20-35 year age group, namely 11 people (44%) and the lowest was in the <24 year age group, namely 6 people (24%). This distribution suggests that CED does not only occur in biologically high-risk age groups but is also prevalent among women within the healthy reproductive age range.

3. Distribution of Respondents by Parity

Table 3
Distribution of Pregnant Women with Chronic Energy Deficiency by Parity

Parity	F	%
Primigravida	16	64%
Multigravida	9	36%
Total	25	100%

Table 3 shows that of the 25 pregnant women with CED, the highest parity was primigravida (16 women) (64%), and the lowest parity was multigravida (9 women) (36%). This result indicates that first-time pregnant women constitute the majority of CED cases, highlighting the potential role of limited pregnancy experience in nutritional vulnerability.

4. Distribution of Respondents According to Employment Status

Table 4
Distribution of Pregnant Women in Chronic Energy Deficiency by Occupation

Job	F	%
Working	11	44%
Not Working	14	56%
Total	25	100%

Based on Table 4, it shows that of the 25 pregnant women with KEK, the highest number of people with unemployed status was 14 people (56%) and the lowest was 11 people (44%). This finding suggests that employment status may be associated with socio-economic conditions that influence access to adequate nutrition during pregnancy.

a. Characteristics of pregnant women with CED based on education

The results of this study indicate that most pregnant women experiencing Chronic Energy Deficiency (CED) had an elementary school education (9 women) (36%), while the smallest proportion had a bachelor's degree. Educational background plays an important role in shaping knowledge, attitudes, and behaviors related to maternal nutrition, as individuals with higher education levels generally find it easier to access and understand health information (S. S. Widyawati, 2020).

This finding is consistent with previous research showing that CED is more prevalent among pregnant women with lower educational attainment (Aprianti Eka, 2017) Furthermore, (Hasibuan, 2017) reported a significant relationship between education level and the nutritional status of pregnant women ($p = 0.047$). In the rural context of Sukamulya Village, low educational levels may be associated with limited access to nutrition information, reliance on traditional dietary practices, and lower awareness of balanced nutritional intake during pregnancy.

From a practical perspective, midwives and community nurses have a key role in providing simple, culturally appropriate nutrition education that considers local food availability and the educational background of pregnant women.

b. Characteristics of pregnant women with CED based on age

The findings showed that most pregnant women with CED were aged 20–35 years (44%), while the lowest proportion was among those under 20 years (24%). Although the age range of 20–35 years is generally considered the optimal reproductive age, this result suggests that CED can also occur in women who are biologically within a healthy reproductive period. Maternal age influences nutritional needs, where younger mothers tend to have insufficient nutritional reserves, while older mothers require higher energy intake due to declining physiological function (S. S. Widyawati, 2020).

Research conducted by (Taba, 2018) found no significant relationship between maternal age and nutritional status, indicating that CED among pregnant women aged under 20 or over 35 may be more strongly influenced by socioeconomic conditions, pregnancy spacing, and antenatal care attendance. In rural settings, contextual factors such as household food access, cultural norms related to meal distribution, and family decision-making roles may contribute to inadequate nutritional intake even among women of healthy reproductive age. Therefore, antenatal care provided by midwives should not only focus on age-related risk but also incorporate family-based counseling to address these contextual factors.

c. Characteristics of pregnant women with CED based on parity

The results of this study found that the pregnant women with the highest incidence of CED were primigravida (16 women) (64%), and the lowest among multigravida (9 women) (36%). CED is more commonly observed among primigravida or nulliparous women, as first-time pregnancy is often accompanied by limited experience and knowledge regarding nutritional requirements and appropriate dietary patterns during pregnancy. Mothers experiencing their first pregnancy may be less prepared to meet the increased nutritional demands of pregnancy (Zahidatul Rizkah, 2017). CED is more commonly observed among



primigravida or nulliparous women, as first-time pregnancy is often accompanied by limited experience and knowledge regarding nutritional requirements and appropriate dietary patterns during pregnancy. Mothers experiencing their first pregnancy may be less prepared to meet the increased nutritional demands of pregnancy (Gina Shofi Halimah, Ratna Dwi Jayanti, 2022), which reported that primigravida status had a significant influence on the incidence of CED, with a prevalence of 77.27%. In rural communities, primigravida women may rely more on family advice or cultural beliefs rather than evidence-based health information. This underscores the importance of the role of midwives in providing early nutritional education, routine nutritional screening, and continuous antenatal guidance, particularly for women experiencing their first pregnancy.

d. Characteristics of pregnant women with CES based on employment status

The results showed that most pregnant women with CED were unemployed or housewives, as many as 14 people (54%). Although these women are not formally employed, they often carry a substantial domestic workload, including household chores and caregiving responsibilities, which can increase energy expenditure without being balanced by adequate nutritional intake (Wijayanti H, 2021). This finding is in line with Ernawati's study (2018), which reported that pregnant women experiencing CED at the Gabus 1 Community Health Center in Pati Regency were predominantly mothers who did not work outside the home. In the rural context, limited household income, dependence on family food provision, and prioritization of other family members' nutritional needs may further restrict pregnant women's access to adequate and diverse food. Community-based interventions led by midwives and nurses, such as home visits, nutrition counseling, and integration with the Supplementary Feeding Program (PMT), are therefore essential to address these challenges (A Ernawati, 2018).

Limitations of The Study

This study has several limitations. The descriptive design limits the ability to determine causal relationships between maternal characteristics and the occurrence of CED. The

relatively small sample size and focus on a single rural village may also limit the generalizability of the findings. In addition, contextual factors such as household food security, cultural dietary practices, and family support were not explored in depth. Future research is recommended to employ analytical or mixed-methods designs to further investigate these factors and provide a more comprehensive understanding of CED among pregnant women in rural settings.

CONCLUSION

This study concludes that pregnant women experiencing Chronic Energy Deficiency (CED) in Sukamulya Village are mostly within the healthy reproductive age range, yet predominantly have low educational attainment, primigravida status, and are unemployed. These findings indicate that CED is not solely associated with age-related risk factors, but is also influenced by limited knowledge, lack of pregnancy experience, and socio-economic conditions. In primigravida women, insufficient experience may affect the fulfillment of nutritional needs during pregnancy.

These findings underscore important implications for both practice and policy. Health workers, particularly midwives in primary healthcare settings, need to strengthen risk-based antenatal care (ANC) by integrating routine nutritional screening, early identification of CED risk, and tailored nutrition counseling into standard ANC services. At the policy level, maternal health programs should prioritize targeted interventions for vulnerable groups, such as primigravida women and those with lower educational backgrounds, through enhanced nutrition education, family involvement, and optimized implementation of supplementary feeding programs. Such strategies are essential to prevent and reduce the incidence of CED and improve maternal and neonatal health outcomes.

DAFTAR PUSTAKA

- A Ernawati. (2018). Hubungan Usia Dan Status Pekerjaan Ibu Dengan Kejadian Kurang Energi Kronis Pada Ibu Hamil. *Jurnal Litbang Media Penelitian, Pengembangan Dan IPTEK*, 14(1), 27–37.
- Abraham, S., Miruts, G., & Shumye, A. (2015). Magnitude of chronic energy deficiency and its associated factors among women of reproductive age in the Kunama population, Tigray, Ethiopia, in 2014. *BMC Nutrition*, 1(1), 12. <https://doi.org/10.1186/s40795-015-0005-y>

- Aguayo, V. M., & Menon, P. (2016). Stop stunting: improving child feeding, women's nutrition and household sanitation in South Asia. In *Maternal & child nutrition: Vol. 12 Suppl 1* (Issue Suppl 1, pp. 3–11). <https://doi.org/10.1111/mcn.12283>
- Aprianti Eka. (2017). GAMBARAN KEJADIAN KEKURANGAN ENERGI KRONIS. *Unjaya*.
- Branca, F., Grummer-Strawn, L., Borghi, E., Blössner, M. de, & Onis, M. de. (2015). *Extension of the WHO maternal, infant and young child nutrition targets to 2030*.
- Desyibelaw, H. D., & Dadi, A. F. (2019). Burden and determinants of malnutrition among pregnant women in Africa: A systematic review and meta-analysis. *PloS One*, *14*(9), e0221712. <https://doi.org/10.1371/journal.pone.0221712>
- Dewey, K. (2001). *Maternal and fetal stress are associated with impaired lactogenesis in human, journal of nutrition*.
- Dinas Kesehatan Provinsi Jawa Barat. (2023). *Prevalensi Kekurangan Energi Kronik pada Ibu Hamil*.
- Dinkes Ciamis. (2024). *Prevalensi Kejadian Ibu Hamil dengan KEK*.
- Eshak, E. S., Okada, C., Baba, S., Kimura, T., Ikehara, S., Sato, T., Shirai, K., & Iso, H. (2020). Maternal total energy, macronutrient and vitamin intakes during pregnancy associated with the offspring's birth size in the Japan Environment and Children's Study. *The British Journal of Nutrition*, *124*(6), 558–566. <https://doi.org/10.1017/S0007114520001397>
- Gina Shofi Halimah, Ratna Dwi Jayanti, W. F. (2022). HUBUNGAN USIA, PARITAS, DAN PEKERJAAN TERHADAP RESIKO KEK IBU HAMIL TRIMESTER 1 DI PUSKESMAS CILENGKRANG BANDUNG TAHUN 2022. *Jurnal Sehat Mandiri*, *17*(2), 94–103.
- Goswami, M. (2015). Anthropometric Characteristics and Chronic Energy Deficiency of the Mankidias-A PTG of Northern Odisha, India. *Stud Tribes Tribals*, *13*(1), 88–93.
- Hasibuan, S. P. (2017). Hubungan Pengetahuan dan Pendidikan dengan Status Gizi Ibu Hamil di Puskesmas Indra Puri Aceh Besar. *Journal of Healthcare Technology and Medicine*, *3*(2).
- Helliyana, Arintonang, Evawany Y, Sanusi, S. R. (2019). The Associations between Maternal Education, Chronic Energy Deficit, and Anemia in Pregnant Women: An Evidence from Lhokseumawe, Indonesia. *Journal of Maternal and Child Health*, *4*(5), 312–316. <https://doi.org/https://doi.org/10.26911/thejmch.2019.04.05.02>
- Katona, P., & Katona-Apte, J. (2008). The interaction between nutrition and infection. *Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America*, *46*(10), 1582–1588. <https://doi.org/10.1086/587658>
- Koletzko, B., Godfrey, K. M., Poston, L., Szajewska, H., Van Goudoever, J. B., De Waard, M., Brands, B., Grivell, R. M., Deussen, A. R., & Dodd, J. M. (2019). Nutrition during pregnancy, lactation and early childhood and its implications for maternal and long-term child health: the early nutrition project recommendations. *Annals of Nutrition and Metabolism*, *74*(2), 93–106.
- Okube, O. T., Wanjiru, M., & Andemariam, W. (2022). Magnitude and determinants of undernutrition among pregnant women attending a public hospital in Kenya. *Open Journal of Obstetrics and Gynecology*, *12*(6), 541–561.
- Pomalingo, A. Y., & Misnati, S. D. I. (2018). Karakteristik Ibu Hamil Kurang Energi Kronis (KEK) di Kecamatan Tilango Kabupaten Gorontalo. *Journal Health And Nutritions*, *4*(1), 36–44.
- Riskesdas. (2023). *Prevalensi Kekurangan Energi Kronik pada Ibu Hamil*.
- Rismawati, R. A., & Ningrum, W. M. (2021). Gambaran luaran bayi pada ibu dengan riwayat kekurangan energi kronis (KEK) di wilayah kerja Puskesmas Sadananya tahun 2020. *Journal of Midwifery and Public Health*, *3*(1), 25–30.
- Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A.-B., Daniels, J., Gülmezoglu, A. M., Temmerman, M., & Alkema, L. (2014). Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*, *2*(6), e323–e333. [https://doi.org/https://doi.org/10.1016/S2214-109X\(14\)70227-X](https://doi.org/https://doi.org/10.1016/S2214-109X(14)70227-X)
- Selamet, M. A. S., Megatsari, H., & Hairri, F. M. (2024). Ecological Study: Prevalence of Chronic Energy Deficiency Among Pregnant Women in Nusa Tenggara Provinces, Indonesia. *Journal of Public Health Research and Community Health Development*, *7*(2), 91–99. <https://doi.org/10.20473/jphrecode.v7i2.39186>
- Sherman, A. R., & Barkley, M. (2011). Nutrition and wound healing. *Journal of Wound Care*,

- 20(8), 357–367.
<https://doi.org/10.12968/jowc.2011.20.8.357>
- Taba, J. (2018). Faktor-faktor yang Mempengaruhi Status Gizi Ibu Hamil di Puskesmas Anggalomoare Kabupaten Konawe Tahun 2018. *Poltekes Kendari*.
- Wati, E. K., Murwani, R., Kartasurya, M. I., & Sulistiyani, S. (2024). Determinants of chronic energy deficiency (CED) incidence in pregnant women: A cross-sectional study in Banyumas, Indonesia . *Narra J*, 4(1 SE-Short Communication), e742.
<https://doi.org/10.52225/narra.v4i1.742>
- Widyawati, S. S. (2020). KARAKTERISTIK IBU HAMIL KEKURANGAN ENERGI KRONIK (KEK) DI PUSKESMAS PAJANGAN BANTUL. *Jurnal JKFT: Universitas Muhamadiyah Tangerang*, 5(2), 68–74.
- Widyawati, W., & Sulistyoningtyas, S. (2020). Karakteristik Ibu Hamil Kekurangan Energi Kronik (Kek) Di Puskesmas Pajangan Bantul. *Jurnal Jkft*, 5(2), 68–74.
- Wijayanti H, R. L. (2021). Faktor-faktor yang Berhubungan dengan Kekurangan Energi Kronik (KEK) pada Ibu Hamil di Puskesmas Jetis II Bantul Yogyakarta. *JKesehatan*, 3(1), 11–18.
- Zahidatul Rizkah, T. M. (2017). Hubungan Antara Umur, Gravida, Dan Status Bekerja Terhadap Resiko Kurang Energi Kronis (KEK) Dan Anemia Pada Ibu Hamil. *Amerta Nutr*, 1(2), 72–79.

