IDENTIFICATION OF PREGNANT WOMEN'S NUTRITIONAL STATUS

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ABSTRAK: SKRINING STATUS GIZI IBU HAMIL

Latar Belakang: Kekurangan Energi Kronik (KEK) pada ibu hamil merupakan keadaan dimana ibu menderita kekurangan makanan yang berlangsung menahun (kronis) sehingga menimbulkan gangguan kesehatan pada ibu hamil. Kondisi ini ditandai dengan Lingkar Lengan Atas (LILA) <23,5 cm. Berdasarkan data jumlah ibu hamil yang mengalami KEK di provinsi Nusa Tenggara Barat (NTB) sebanyak 12,9%. KEK pada ibu hamil perlu mendapatkan perhatian khusus karena dapat menyebabkan kematian ibu dan bayi.

Tujuan: Penelitian ini bertujuan untuk mengidentifikasi status gizi ibu hamil di Puskesmas Gunungsari Tahun 2023.

Metode: Jenis penelitian yang digunakan dalam peneitian ini adalah kuantitatif dengan rancangan penelitian deskriptif. Populasi dalam penelitian ini berjumlah 663 ibu hamil. Sampel dalam penelitian ini berjumlah 250 ibu hamil. Teknik pengambilan sampel menggunkan purposive sampling. Jenis data yang digunakan adalah data skunder.

Hasil: Hasil menunjukkan 77 responden mengalami KEK (30,8%) dan 173 tidak mengalami KEK(69,2%). 61 responden usia responden beresiko (30,8%) dan 173 tidak beresiko(69,2%). 17 responden memiliki jarak responden beresiko (6,8%) dan 233 tidak beresiko(93,2%). 14 responden memiliki paritas responden beresiko (5,6%) dan 233 tidak beresiko (94,4%)

Kesimpulan: Hasil menunjukkan 77 responden mengalami KEK (30,8%) dan 173 tidak mengalami KEK (69,2%). Perlu meningkatkan edukasi tentang pencegahan KEK.

Saran :perlu adanya peningkatan skrining status gizi ibu hamil agar dapat mencegah Kekurangan energi kronik serta dapat memberikan KIE tentang factor yang dapat mempengaruhi seperti jarak kehamilan, usia , paritas

Kata Kunci : Ibu Hamil ,Identifikasi, Jarak Kehamilan, Kekurangan Energi Kronik, Paritas, Usia

ABSTRACT

Background: Chronic Energy Deficiency (CED) in pregnant women is a condition where the mother suffers from a chronic lack of food, causing health problems in pregnant women. This condition is characterized by Upper Arm Circumference (LILA) <23.5 cm. Based on data, the number of pregnant women who experience CED in West Nusa Tenggara (NTB) province is 12.9%. CED in pregnant women needs special attention because it can cause death of mother and baby.

Objective: This study aims to identify the nutritional status of pregnant women at the Gunungsari Health Center in 2023.

Method: The type of research used in this study is quantitative with a descriptive research design. The population in this study amounted to 663 pregnant women. The sample in this study amounted to 250 pregnant women. The sampling technique used purposive sampling. The type of data used is secondary data.

Results: The results showed that 77 respondents experienced KEK (30.8%) and 173 did not experience KEK (69.2%). 61 respondents were at-risk respondents (30.8%) and 173 were not at risk (69.2%). 17 respondents had a distance of at-risk respondents (6.8%) and 233 were not at risk (93.2%). 14 respondents had a parity of at-risk respondents (5.6%) and 233 were not at risk (94.4%)

Conclusion: The results showed that 77 respondents experienced KEK (30.8%) and 173 did not experience KEK (69.2%). Need to improve education about KEK prevention.

Suggestion :There is a need to increase screening of the nutritional status of pregnant women in order to prevent chronic energy deficiency and to provide IEC regarding factors that can influence this, such as pregnancy spacing, age, parity.

Keywords: Age ; Chronic Energy Deficiency; Identification; Parity; Pregnan , Pregnancy Spacing.

INTRODUCTION

Chronic Energy Deficiency (CED) in pregnant women is a condition where the mother suffers from chronic food deficiency which causes health problems in pregnant women. Chronic Energy Deficiency (CED) is one of the causes of the high maternal and infant mortality rate. The World Health Organization (WHO) noted that 40% of maternal deaths in developing countries are related to CED (Musaddik, Putri, L. A. R., & M 2022). Chronic Energy Deficiency can cause bleeding and can increase the risk of giving birth to a baby with low birth weight. (Mustika, N., & Lestari 2019).

Chronic Energy Deficiency (CED) in pregnant women is still a serious global health problem. According to WHO (2016), the prevalence of CED in pregnant women reached 30.1%. In 2017 there was an increase to 35-75%. The incidence of Chronic Energy Deficiency in developing countries such as Bangladesh, India, Indonesia, Myanmar, Nepal, Sri Lanka and Thailand is 15-47%. Bangladesh is the country with the highest incidence of Chronic Energy Deficiency (47%) and the lowest is in Thailand (15% -25%), while Indonesia is ranked 4th largest (35%) (Fatimah, S., & Fatmasanti 2019a).

According to data from the Director General of Public Health in 2021, there were 12.9% of pregnant women in West Nusa Tenggara who experienced Chronic Energy Deficiency. (Kemenkes, 2022). This figure decreased by 8.6% from 2018. (Kemenkes, 2018). Although the incidence of Chronic Energy Deficiency in pregnant women in NTB has reached the expected target, it is still a public health problem that must be resolved. (Kemenkes 2022).

Based on data from the West Lombok Health Service in 2022, around 1,866 pregnant women suffered from Chronic Energy Deficiency. (Dinkes Lobar, 2022) . This figure has increased compared to the 2021 Lobar Health Office data, namely 1,785 pregnant women suffering from Chronic Energy Deficiency. There are 5 sub-districts in West Lombok with the highest percentage of pregnant women experiencing KEK, namely Gunungsari Sub-district, where 273 pregnant women experienced KEK, Gerung Sub-district 236 pregnant women, Narmada Sub-district 228 pregnant women, 3 Sekotong Sub-districts 213 pregnant women and Lembar Sub-district 205 pregnant women (Dinas Kesehatan Lombok Barat 2023)

Chronic Energy Deficiency is characterized by an Upper Arm Circumference (LILA) <23.5 cm. How to measure the Upper Arm Circumference using a LILA tape, namely the measurement is carried out on the left arm or inactive arm. LILA measurements are carried out in the middle between the base of the upper arm and the tip of the elbow in cm (centimeters) (Noor, M. S. 2021a)

Chronic Energy Deficiency in pregnant women can be influenced by several direct and indirect factors (Mahirawati Vita Kartika, 2014). Direct factors causing KEK are nutritional intake and disease / infection. While indirect factors causing KEK are Age, Parity, Pregnancy Spacing, Education, Family Work and others (Noor, M. S. 2021a)

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Research conducted by Harna, (2020) stated that there is a significant relationship between KEK status and the incidence of anemia in pregnant women (<0.005), Pregnant women who experience KEK have a 3 times greater risk of experiencing anemia. Pregnant women who experience KEK have reduced body weight and energy reserves. One of the causes of anemia in pregnant women is mothers who experience nutritional problems, namely KEK nutritional status caused by inadequate food intake (Handayani, N., Yunola, S., & Indiani 2021a).

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The government's efforts to overcome Chronic Energy Deficiency in pregnant women are through the Provision of Supplementary Food (PMT) made from local food. Presidential Regulation Number 72 of 2021 concerning the Acceleration of

Stunting Reduction stipulates that PMT made from local food is to support the achievement of indicators for pregnant women with Chronic Energy Deficiency (KEK) and Undernourished Toddlers receiving additional nutritional intake. The purpose of PMT made from local food is to reduce Chronic Energy Deficiency in pregnant women. In addition, the Ministry of Health has launched a new service called the Ayosehat Chatbot, which is the official health education information channel of the Ministry of Health that can be accessed via the WhatsApp application. This chatbot is the result of a digital collaboration between UNICEF and Meta Indonesia .(Kemenkes RI 2023)

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Based on the background above, the researcher is interested in conducting research with the title "identification of nutritional status in pregnant women".

RESEARCH METHODS

The type of research used is quantitative with a descriptive research design. This research uses a secondary data analysis method, which is a research strategy that utilizes existing data to find new problems or test the results of previous research. (Ernawati 2018). This study identified the nutritional status of Chronic Energy Deficiency in pregnant women at the Gunungsari Health Center in 2023

Population is the entire object of research being studied. Population can be interpreted as all elements in research including objects and subjects with certain characteristics and traits. The population in this study amounted to 663 people, namely all pregnant women who underwent. The population in this study was 663 people, namely all pregnant women who underwent examinations during Perata visits to the Health Center in the first trimester. (Amin, N. F., Garancang, S., & Abunawas 2023). A sample is a portion taken from the entire object being studied and is considered to represent the entire population. A sample is a portion or representative of the population to be studied. (Amin, N. F., Garancang, S., & Abunawas 2023). This type of research uses Non-Probability Sampling with purposive sampling technique. According to (Sugiyono, 2018) Non-Probability Sampling is a sampling technique that does not provide equal opportunities or chances to each member of the population when being selected as a sample. While the purposive sampling technique according to (Sugiyono, 2018) is sampling using several specific considerations according to the desired criteria to be able to determine the number of samples to be studied. The inclusion and exclusion criteria in this study are as follows: 1) Inclusion criteriaInclusion criteria are criteria or characteristics that need to be met by members of the population that can be taken as samples (Notoadmojo, 2018) the inclusion criteria in this study are: a) Pregnant women who do K1 in the first trimester at the Gunungsari Health Center in 2023 b) Pregnant women who have complete data in the medical records and cohort books of the Gunungsari Health Center

2) Exclusion criteria, Exclusion criteria are characteristics of members of the population that cannot be taken as samples (Notoadmojo, 2018). The exclusion criteria in this study are: a) Pregnant women with comorbidities such as HIV/AIDS, Tuberculosis, Infectious diseases such as worms whose data is in the medical records. The sample in this study was 250 people, namely pregnant women who made their first visit in the first trimester at the Gunungsari Health Center in 2023. The research time was conducted in March 2024.

RESEARCH RESULTS

Based on research conducted since 2023, the UPT BLUD Gunungsari Health Center, West Lombok Regency, obtained the following results:

Table 1
Frequency Distribution of Chronic Energy Deficiency Incidence in Pregnant Women at Gunungsari Health Center

Variable	N	%
Chronic Energy Deficiency		
CED	77	30,8
Non CED	173	69,2

Based on table 1, it shows that 77 respondents experienced CED (30,8%) and 173 did not experience CED (69,2%).

Table 2
Frequency Distribution of Age in Relation to Chronic Energy Deficiency Incidence in Pregnant Women at Gunungsari Health Center

Variable	N	%

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Ages		
Risk	61	30,8
No Risk	89	69,2

Based on table 2, it shows that 61 respondents are at risk (30.8%) and 173 are not at risk (69.2%).

Table 3
Frequency Distribution of Pregnancy Spacing Against Chronic Energy Deficiency Incidence in Pregnant Women at Gunungsari Health Center

Variabel	N	%
Pregnancy Spacing		
Risk	17	6,8
No Risk	233	93,2

Based on table 3, it shows that 17 respondents have a risky respondent range (6.8%) and 233 are not at risk (93.2%).

Table 4
Distribution of Parity Against the Incidence of Chronic Energy Deficiency in Pregnant Women at Gunungsari Health Center

Variabel	N	%
Parity		
Risk	14	5,6
No Risk	236	94,4

Based on table 4, it shows that 14 respondents have a parity of respondents at risk (5.6%) and 233 are not at risk (94.4%).

DISCUSSION

Based on table 1, it shows that 77 respondents experienced KEK (30.8%) and 173 did not experience KEK (69.2%). Chronic Energy Deficiency (KEK) is a condition where a person experiences a nutritional imbalance in his body that lasts a long time (chronic) which can result in health problems. (Noor, M. S. 2021b). CED is a nutritional problem caused by a lack of food intake over a long period of time, even years. Lack of energy intake from macronutrients (carbohydrates, proteins and fats) and micronutrients, especially vitamin A, vitamin D, folic acid, iron, zinc, calcium and iodine and other micronutrients (Izzati, R. F., & Mutalazimah 2022). The main factor causing KEK in pregnant women is that before pregnancy the mother has experienced a lack of energy, because the energy needs of pregnant women are higher than those of non-pregnant women. Pregnancy increases energy metabolism, which results in an increase in the need for energy and other nutrients.(Kasa, M. Y. S., Daka, J. A., & Simanungkalit 2022)(Irdayani 2018). CED is one of the most common nutritional problems in pregnant women. KEK in pregnant women is a condition where pregnant women lack protein and energy intake which can cause health problems in the mother and fetus (Chahyanto, B. A., & Wulansari 2018). Pregnant women are said to be KEK if their upper arm circumference is (LILA) < 23,5 and body mass index <17.0 (Fitriah, A. H., Supariasa, I. D. N., Riyadi, D. B., & Bakri 2018b).

Based on table 2 shows 61 respondents are at risk (30.8%) and 173 are not at risk (69.2%). Age is the length of time a person has lived since birth until now. According to mentioning high-risk ages in pregnancy include young primi (<20 years) and old primi (>35 years) (Wijayanti, H., & Rosida 2023) .(Hairiyah, sri wahyuni 2017)

First pregnancy at age <20 years, uterus and pelvis have not grown to adult size (Wijayanti, H., & Rosida 2023). Pregnancy at a young age has a bad risk for the health of the mother and fetus. At that age, the condition of the uterus and pelvis often has not grown to adult size. As a result, pregnant women at that age may experience prolonged/obstructed labor or other disorders due to the mother's unpreparedness to accept her duties and responsibilities as a parent. (Hazairin, A. M., Arsy, A. N., Indra, R. A., & Susanti 2021). At the age of 35 years or more, changes occur in the tissues of the uterus and the birth canal is no longer flexible. If you get pregnant at that age, the risk of pregnancy is high. Apart from that, aged 35 years there is a tendency to have other diseases in the mother's body (Fitriah, A. H. 2018).(Fatimah, S., & Fatmasanti 2019b)

Based on table 3, it shows that 17 respondents have a risky respondent distance (6.8%) and 233 are not at risk (93.2%). Pregnancy spacing is defined as a consideration to determine the distance between the first pregnancy and the next pregnancy. Pregnancy spacing that is too close is the distance between one pregnancy and the next pregnancy of less than 2 years, or 24 months. The ideal pregnancy spacing is more than 2 years, thus giving the body the opportunity to repair its supplies and reproductive organs to be ready to conceive again. (Susanti 2018)(Hairiyah, sri wahyuni 2017). The condition of getting pregnant again too close together, where at the same time the mother is still breastfeeding, will increase nutritional problems for the mother and the fetus she is carrying if they do not get a balanced nutritional intake to fulfill their bodies.

(Anjelika, Ihsan, M. H., & Dammalewa 2021)(Handayani, N., Yunola, S., & Indiani 2021b).

Pregnancy will increase metabolism, thereby increasing the need for energy and nutrients.(Fitriah, A. H., Supariasa, I. D. N., Riyadi, D. B., & Bakri 2018a) Repeated pregnancies in a short period of time will drain fat, protein, glucose, vitamins, minerals and folic acid so that ATP decreases which causes a decrease in the body's metabolic processes, then the body carries out a catabolism process so that it will use up existing food reserves, as a result the body will lack energy.(Antarsih, N. R., & Suwarni 2023).

Based on table 4, it shows that 14 respondents have parity respondents at risk (5.6%) and 233 are not at risk (94.4%). Parity is the number of deliveries carried out by the mother, whether the delivery of a live or dead child but does not include (Maharrani, T., & Nugrahini 2017). Having many children if you have more than 3 children. Women who have given birth frequently can result in damage to the blood vessels and vascularization of the uterine wall due to previous childbirth, so that blood flow to the placenta is inadequate, which can ultimately reduce its function and affect the circulation of nutrients to the fetus. (Prawirohardjo, 2014).

CONCLUSION

Of the 250 respondents, 94.4% of respondents had non-risk parity, (93.2%) respondents had non-risk pregnancy intervals, (75.6%) respondents had non-risk ages, (73.2%)

SUGESTION

Recommendations for pregnant women to check their nutritional status, to find out the status of KEK or not. For pregnant women who experience KEK, they can improve their nutritional quality by eating nutritious food, paying attention to the main causative factors that can cause KEK..

REFERENCES

Amin, N. F., Garancang, S., & Abunawas, K. 2023. "Konsep Umum Populasi Dan Sampel Dalam Penelitian." *Jurnal Pilar* 14(1): 15–31.

Anjelika, Ihsan, M. H., & Dammalewa, J. Q. 2021. "Faktor-Faktor Yang Berhubungan Dengan Kejadian Kek Pada Ibu Hamil Di Wilayah Kerja Puskesmas Kolono Kabupaten Konawe Selatan." *Jurnal Ilmiah Karya Kesehatan* 2(1): 25–34. https://stikesks-kendari.e-journal.id/jikk.

Antarsih, N. R., & Suwarni, S. 2023. "Faktor Risiko Kurang Energi Kronik Pada Ibu Hamil Di Wilayah Kecamatan Bumi Agung Way Kanan Lampung." *Muhammadiyah Journal of Midwifery* 4(1): 26. https://doi.org/10.24853/myjm.4.1.26-33.

Chahyanto, B. A., & Wulansari, A. 2018. "Aspek Gizi Dan Makna Simbolis Tabu Makanan Ibu Hamil Di Indonesia." *Jurnal Ekologi Kesehatan* 17(1): 52–63. https://doi.org/10.22435/jek.17.1.140.52-63.

Dinas Kesehatan Lombok Barat. 2023. "PROFIL KESEHATAN PROVENSI NUSA TENGGARA BARAT TAHUN 2022." https://drive.google.com/file/d/1rFIHqjNEZdQ7NvLH.

Ernawati, A. 2018. "Hubungan Usia Dan Status Pekerjaan Ibu Dengan Kejadian Kurang Energi Kronis Pada Ibu Hamil." *Jurnal Litbang: Media Informasi Penelitian*. http://ejurnal-litbang.patikab.go.id/index.php/jl/article/view/106.

Fatimah, S., & Fatmasanti, A. U. 2019a. "Hubungan Antara Umur, Gravida Dan Usia Kehamilan Terhadap Resiko Kurang Energi Kronis (Kek) Pada Ibu Hamil." *Jurnal Ilmiah Kesehatan Diagnosis* 14(3): 271–74. https://doi.org/10.35892/jikd.v14i3.248.

Fatimah, S., & Fatmasanti, A. U. 2019b. "Hubungan Antara Umur, Gravida Dan Usia Kehamilan Terhadap Resiko Kurang Energi Kronis (Kek) Pada Ibu Hamil." *Jurnal Ilmiah Kesehatan Diagnosis* 14(3): 271–74. https://doi.org/10.35892/jikd.v14i3.248.

Fitriah, A. H., Supariasa, I. D. N., Riyadi, D. B., & Bakri, B. 2018a. "Buku Praktis Gizi Ibu Hamil. Media Nusa Creative,." : 74.

Fitriah, A. H., Supariasa, I. D. N., Riyadi, D. B., & Bakri, B. 2018b. "Buku Praktis Gizi Ibu Hamil." *Media Nusa Creative* 74.

Fitriah, A. H., et al. 2018. "Buku Praktis Gizi Ibu Hamil." *Media Nusa Creative* 74.

Hairiyah, sri wahyuni, sri sumarni. 2017. "Gambaran Karakteristik Faktor-Faktor Kejadian Kekurangan Energi Kronik (KEK) Pada Ibu Hamil Di Wilayah Puskesmas Siwalan Kabupaten Pekalongan."

Handayani, N., Yunola, S., & Indiani, P. L. N. 2021a. "Hubungan Umur Ibu, Paritas Dan Jarak Kehamilan Dengan Kejadian Kekurangan Energi Kronik (Kek) Pada Ibu Hamil Di Wilayah Kerja Puskesmas Tanjung Agung Kabupaten Muara Enim Tahun 2020." *Jurnal Doppler* 5(2): 163.

———. 2021b. "Hubungan Umur Ibu, Paritas Dan Jarak Kehamilan Dengan Kejadian Kekurangan Energi Kronik (KEK) Pada Ibu

Hamil Di Wilayah Kerja Puskesmas Tanjung Agung Kabupaten Muara Enim Tahun 2020." *Jurnal Doppler* 5(2): 157–63.

Hazairin, A. M., Arsy, A. N., Indra, R. A., & Susanti, A. I. 2021. "Gambaran Kejadian Risiko 4T Pada Ibu Hamil Di Puskesmas Jatinangor." *Jurnal Bidan Cerdas* 3(1): 10–17. https://doi.org/10.33860/jbc.v3i1.358.

Irdayani, D. 2018. "Faktor-Faktor Yang Berhubungan Dengan Kejadian Kekurangan Energi Kronis (Kek) Pada Ibu Hamil TM II Di Puskesmas Lingkar Barat Kota Bengkulu Tahun 2018." http://search.ebscohost.com/login.aspx?direct=true&db=sph&AN=119374333&site=ehost-live&scope=site%0Ahttps://doi.org/10.1016/j.neuron.2018.07.032%0Ahttp://dx.doi.org/10.1016/j.tics.2017.03.010%0Ahttps://doi.org/10.1016/j.neuron.2018.08.006.

Izzati, R. F., & Mutalazimah, M. 2022. "Energy, Protein Intake, and Chronic Energy Deficiency in Pregnant Women." *Proceedings of the International Conference on Health and Well-Being (ICHWB 2021)*: 70–77. https://doi.org/10.2991/ahsr.k.220403.010.

Kasa, M. Y. S., Daka, J. A., & Simanungkalit, E. F. B. 2022. "Faktor-Faktor Yang Mempengaruhi Tingkat Pendidikan Anak Di Kelurahan Fatukbot Kecamatan Atambua Selatan Kabupaten Belu." *Journal Economic Education, Business, and Accounting,* 1(2): 79–86.

Kemenkes RI. 2023. "Petunjuk Teknis Pemberian Makanan Tambahan (PMT) Berbahan Pangan Lokal Untuk Balita Dan Ibu Hamil."

Kemenkes, R.I. 2022. *Ditjen Kesehatan Masyarakat Tahun 2021.*

Kusumastuti, T., Putri, D. P., Eliza, C. P., & Hanifah, A. N. 2023. "Kek Pada Ibu Hamil : Faktor Risiko Dan Dampak." *Journal.Universitaspahlawan* 4: 2719–26.

Lestari, A. 2021. "Faktor Risiko Kurang Energi Kronis Pada Ibu Hamil Di Puskesmas Gunungpati." *Sport and Nutrition Journal,* 3(2): 1–13. https://journal.unnes.ac.id/sju/index.php/spnj.

Maharrani, T., & Nugrahini, E. Y. 2017. "Premature Rupture of the Fetal. Hubungan Usia, Paritas Dengan Ketuban Pecah Dini Di Puskesmas Jagir Surabaya." 338(10): 663–70.

Marjan, A. Q., Aprilia, A. H., & Fatmawati, I. 2021. "Analisis Determinan Faktor Yang Berhubungan Dengan Kejadian Kurang Energi Kronik (KEK) Pada Ibu Hamil Di Wilayah Gunung Sindur, Bogor." *Jurnal Kesehatan Terpadu (Integrated Health Journal)* 12(12): 39–47.

Musaddik, Putri, L. A. R., & M, H. I. 2022. "Hubungan Sosial Ekonomi Dan Pola Makan Dengan Kejadian Kekurangan Energi Kronis (KEK) Pada Ibu Hamil Di Wilayah Kerja Puskesmas Nambo Kota Kendari." *Jurnal Gizi Ilmiah* 9(2).

Mustika, N., & Lestari, R. 2019. "Hubungan Variasi Menu Makanan Dengan Minat Sarapan Pagi Pada Siswa Kelas IV Di SDN 11 Rujukan Lubuk Buaya Tahun 2019. 2(1)." *Prosiding Seminar Kesehatan Perintis* 2(1): 47–49. https://jurnal.upertis.ac.id/index.php/PSKP/article/view/373.

Noor, M. S., et al. 2021a. *Buku Ajar Kekurangan Energi Kronik (KEK)*. 57th ed.

———. 2021b. "Buku Ajar Kekurangan Energi Kronik (KEK) Disusun Oleh." 57.

Puti Sari, Hapsari, D., Dharmayanti, I., & Kusumawardani, N. 2015. "Faktor-Faktor Yang Berpengaruh Terhadap Risiko Kehamilan '4 Terlalu (4-T)' Pada Wanita Usia 10-59 Tahun (Analisis Riskesdas 2010)." *Media Penelitian Dan Pengembangan Kesehatan* 24(3): 143–52. https://doi.org/10.22435/mpk.v24i3.3649.143-152.

Susanti, T. 2018. "Hubungan Usia Dan Jarak Kehamilan Dengan Kejadian Plasenta Previa Di RSUD Dr. H.Abdul Moeloek Provinsi Lampung Tahun 2018. ,"." *Jurnal Kesehatan "Akbid Wira Buana* 4(2): 1–11.

Wijayanti, H., & Rosida, L. 2023. "Faktor-Faktor Yang Berhubungan Dengan Kekurangan Energi Kronik (KEK) Pada Ibu Hamil Di Puskesmas Jetis II Bantul Yogyakarta." *Jurnal Kesehatan* I(14).