Dharmawangsa: International Journals of The Social Science, Education and Humanities
ISSN: 2716-5132 (p) Vol. 7, No. 1, 2026 Page: 287-293

The Effect of Oatbits Biscuits (Oat 8 Choco Hazel) and SGM Bunda Milk on Weight Gain in First-Trimester Pregnant Women with Chronic Energy Deficiency at the Public Maternity Hospital in Bogor in 2024

Riska Meca Dwikusrini[1] , Putri Agus Febriyani[2] , Meinasari Kurnia Dewi[3]
[1,2,3]universitas Indonesia Maju Fakultas Vokasi
Program Studi Pendidikan Profesi Bidan Program Profesi
Jakarta
E-mail: riskameca.bdn@gmail.com

ABSTRACT

Chronic Energy Deficiency (KEK) in pregnant women is a condition of pregnant women due to an imbalance in energy and protein nutrient intake, so that the substances needed by the body are not met. There are two non-pharmacological efforts made in the prevention of KEK, namely by providing Oatbits Biscuits (Oat 8 Choco Hazel) and SGM Bunda Milk. To determine the effect of providing oatbits biscuits (Oat 8 Choco Hazel) and SGM Bunda milk on weight gain in pregnant women in the first trimester with KEK (Chronic Energy Deficiency) at PMB S in Bogor in 2024. Data collection used observation techniques by directly observing the objects to be studied which were then collected in a note. The results of this study on respondent I, the weight of the first visit was 40 kg with a LiLa of 21 cm (KEK), on the second visit the weight was 43 kg and on the third visit the weight was 45 kg and LiLa 22.5 cm (KEK). Respondent II's weight at the first visit was 50 kg and LiLa 22 cm (KEK), on the second visit the weight was 55 kg and on the third visit the weight was 56 kg and LiLa 24.5 cm (not KEK). Pregnant women in the first trimester with KEK who were given SGM Bunda milk intervention experienced faster weight gain compared to those given oatbits biscuits (Oat 8 Choco Hazel) intervention. For further studies, it is hoped that the frequency of consumption of oatbits biscuits (Oat 8 Choco Hazel) can be increased to two or three packs a day so that weight gain in pregnant women in the first trimester with KEK is greater and can reduce the incidence of pregnant women with KEK in Indonesia.

Keywords: Pregnant Women with KEK, PMT, Pregnancy Milk

I. INTRODUCTION

Nutritional issues remain a major problem in developing countries such as Indonesia. One such issue is Chronic Energy Deficiency (CED). Nutritional challenges experienced early in life can affect quality of life in the future. Nutritional problems commonly found in pregnant women include Chronic Energy Deficiency (CED) (Anugrah Novianti, 2022).

CED is a condition in which a person suffers from chronic food deficiency, characterized by an upper arm circumference (UAC) < 23.5 cm, leading to health complications. Chronic Energy Deficiency (CED) is one of the most common nutritional problems during pregnancy. CED in pregnant women results from an imbalance in the intake of energy and protein, leading to an insufficient supply of the nutrients the body needs (Anugrah Novianti, 2022).

The global maternal mortality rate (MMR) in 2019 was 303,000. The Maternal Mortality Rate (MMR) in ASEAN was 235 per 100,000 live births. Indonesia has the highest MMR in Southeast Asia, at 307 per 100,000 live births. Reducing MMR and infant mortality rates is one of the primary targets of the Sustainable Development Goals (SDGs). There are nine SDGs, two of which relate to improving maternal health; the SDGs place greater emphasis on maternal mortality related to pregnancy and childbirth, with a target of 70 per 100,000 live births for the maternal mortality rate (Hamdin, 2022).

Chronic Energy Deficiency (CED) is one of the causes of high rates of maternal and infant mortality as well as low birth weight in Indonesia. Based on data from the 2021 routine report collected from 34 provinces, it was found that there were 283,833 pregnant women with a mid-upper arm circumference (MUAC) < 23.5 cm (at risk of CED) out of 3,249,503 pregnant women whose MUAC was measured, indicating that the proportion of pregnant women at risk of CED was 8.7%, while the 2021 target was 14.5%. This achievement indicates that this year's target for

pregnant women at risk of KEK has exceeded the 2021 Ministry of Health Strategic Plan target. When compared to the public health thresholds set by the WHO for pregnant women at risk of KEK, Indonesia still falls into the category of countries with moderate public health issues (5–9.9%) (Tiomora Boru Nainggolan, 2024).

According to data from the 2020 West Java Provincial Health Office Report, 55,629 cases of chronic energy deficiency (CED) among pregnant women were identified across 27 regencies and cities in West Java Province. The Bogor Regency had the second-highest number of cases, with 4,897 pregnant women suffering from chronic energy deficiency (Harna, 2022). Meanwhile, based on reports from the annual ANC registry at PMB S, the incidence of CED among pregnant women was 21 cases in 2021, 17 cases in 2022, and 19 cases in 2023.

Chronic energy deficiency in pregnant women affects both the mother and her fetus. The effects of chronic energy deficiency (CED) on pregnant women include prolonged labor, preterm birth, and an increased likelihood of cesarean delivery. The effects of CED in pregnant women on the fetus include impaired fetal growth, miscarriage, neonatal death, stillbirth, infant anemia, congenital defects, intrauterine death, and low birth weight (Fadilla Yahya, 2023). The incidence of KEK among pregnant women can be prevented through the Supplementary Feeding Program (PMT). Supplementary feeding in this context can take the form of biscuits provided by health departments or locally sourced food-based supplements. The PMT provided to pregnant women serves as a supplementary meal or snack when the pregnant woman experiences a loss of appetite.

II. LITERATURE REVIEW

The PMT is intended as an alternative to meet the nutritional needs of pregnant women (Muhamad Z, 2019). Data from the 2018 Riskesdas survey shows that 34.8% of PMT recipients did not finish their MT. This was due to several factors, namely the food not tasting good (23.7%), a lack of variety (7.5%), it being too sweet (14.1%), disliking the aroma (10.2%), experiencing side effects (6.8%), forgetting (2.7%), the food being consumed by another household member (18.4%), and other reasons (16.6%) (Ministry of Health, 2019). Research conducted by (Fitri Juliasari, 2020) revealed that 17.9% of respondents received PMT, while 82.1% did not. Among respondents, 98.5% experienced weight gain, and 1.5% did not. Statistical analysis revealed a p-value <0.005, indicating a significant association between PMT and weight gain among pregnant women with KEK at the Putih Doh Community Health Center in 2020.

Based on the results of statistical tests in the study conducted by (Etika Widya Krisnaningrum, 2023), a p-value of 0.009 was obtained; therefore, it can be concluded that the provision of UHT milk is effective in improving the nutritional status of pregnant women with KEK at the Batu Betumpang Community Health Center in 2022. The supplementary feeding (PMT) intervention for pregnant women identified as at risk for KEK, involving the provision of Oatbits biscuits (Oat 8 Choco Hazel) and SGM Bunda milk, is expected to meet nutritional needs, thereby improving the nutritional status of pregnant women, as Oatbits biscuits and SGM Bunda milk are rich in nutrients. Therefore, this study aims to examine the effect of providing Oatbits biscuits (Oat 8 Choco Hazel) and SGM Bunda milk on weight gain in first-trimester pregnant women with chronic energy deficiency (CED) at PMB S in Bogor in 2024.

III. RESEARCH METHODOLOGY

The research design used is a descriptive study. A descriptive study is a study that employs the case study method or approach. Case studies are limited by time and place, and the cases studied involve events, activities, or individuals and describe or depict them (Indra Nanda, 2021). The case study to be conducted aims to determine the effectiveness of Oatbits Biscuits (Oat 8 Choco Hazelnut) and SGM Buinda milk in increasing the body weight of first-trimester pregnant women with KEiK at PMB S in Bogor in 2024. Data collection will use the observation technique

by conducting direct observation of the subjects to be studied, which will then be compiled into a record.

IV. RESULT AND DISCUSSION

Table 1 Comparison of Midwifery Care Outcomes Between Respondent I and Respondent II

No	Intervensi	Intervention Visit 1 (Day 1)		Visit 2 (Day 15)		Visit 3 (Day 30)	
		BB	LiLa	BB	LiLa	BB	LiLa
1	**Respondent I: Oatbits Cookies (Oat 8 Choco Hazeil).**	40 kg	21 cm	43 kg	-	45 kg	23 cm
2	**Respondent II: Suisui SGM Buinda**	50 kg	22 cm	55 kg	-	56 kg	24,5 cm

Table 1 above shows that there is a difference in obstetric outcomes between pregnant women in the first trimester with CED (Chronic Energy Deficiency) who received an oat-based biscuit intervention (Oat 8 Choco Hazeil) compared to pregnant women in the first trimester with CED (Chronic Energy Deficiency) who received the SGM Buinda milk intervention. In the first group of first-trimester pregnant women with CED (Chronic Energy Deficiency) who received the oat-based biscuit intervention (Oat 8 Choco Hazelnut), the results of the initial examination showed a body weight (BW) of 40 kg and a mid-upper arm circumference (MUAC) of 21 cm; her body weight increased to 43 kg in the second trimester, and subsequently increased again to 45 kg and a mid-upper arm circumference of 23 cm in the third trimester.

Meanwhile, for the second group of pregnant women in the first trimester with KEiK (Chronic Energy Deficiency) who received the SGM Buinda supplementation intervention, the results of the first trimester examination showed a body weight (BW) of 50 kg and a LiLa of 22 cm, her body weight increased to 55 kg in the second trimester, and subsequently increased again in the third trimester to 56 kg with a mid-upper arm circumference (MUAC) of 24.5 cm.

Based on these results, it can be concluded that pregnant women in their first trimester with chronic energy deficiency (CED) who were given SGM Bunda milk experienced faster weight gain compared to pregnant women who received the Oatbits biscuit intervention (Oat 8 Choco Hazeil).

Discussion

The Effect of Oatbits Biscuits (Oat 8 Choco Hazel) on Weight Gain in First-Trimester Pregnant Women with Chronic Energy Deficiency at PMB S in Bogor in 2024

Research findings indicate that pregnant women in their first trimester with chronic energy deficiency (CED) who received an Oat 8 Choco Hazel biscuit intervention (Group I) experienced weight gain. At the first visit, their weight was 40 kg; it increased to 43 kg at the second visit, and further increased to 45 kg at the third visit.

Oatbts Biscuits (Oat 8 Choco Hazel) are a dietary supplement containing 130 kcal per serving (3 biscuits) with ingredients such as wheat flour, sugar, oats (15.33%), vegetable oil, chocolate chips, hazelnuts (3.4%), milk chocolate (2%), glucose, calcium carbonate, and salt. The nutrients in these biscuits are essential for pregnant women, particularly those with KEK, to help gain weight so that the child is not at risk of being born with low

birth weight. Consuming these biscuits can have positive health benefits, as they contain dietary fiber (β-glucan) and phenolic compounds with high antioxidant activity. β-glucan is an important nutrient for humans given its role in regulating digestive rate, nutrient absorption, serving as a substrate for gut microbiota, and enhancing lactation. Additionally, it offers benefits such as lowering blood cholesterol, reducing blood pressure, and preventing colorectal cancer (Heriniawat, 2022). According to the literature, hazelnuts contain 15% protein, or 15 g per 100 g. The standard method used by nutritionists to calculate daily protein intake is Body Weight (kg) × 0.8. Here, 0.8 (0.8 g/kg body weight) is the figure established by the WHO (World Health Organization) for the protein requirements of adults. By consuming 100 g of hazelnuts per day, one meets 20% (0.2 g) of the recommended 0.8 g daily protein requirement, with the remainder met by consuming high-protein foods such as milk, fish, meat, and eggs (Syarfuddini K.A., 2020).

This is in accordance with research conducted by Ftr Julasar, Elsa Ftra Ainia (2021) on "Additional Food Braves (PMT) With Weight Gain in Pregnant Women with KEK" with quantitative research using an analytical survey design with a cross-sectional approach. The results of the statistical test showed a p-value <0.005, which means there is a relationship between PMT and Weight Gain in pregnant women with KEK at the Putih Doh Health Center in 2020. According to (Chor Elsera, 2021) the cause of KEK is not yet known for certain, this may be the main cause due to a lack of energy and protein intake over a long period. KEK can increase malnutrition in the fetus so that the baby is born with LBW, in addition it can also increase the occurrence of bleeding and postpartum infections.

The advantages of oatbts biscuits (Oat 8 Choco Hazel) are that they contain high calories, with a soft biscuit texture that is very easy to chew, the chocolate content in these biscuits contains methylxainithinie compounds, especially theobromine, this content has benefits similar to caffeine in optimizing energy. Chocolate also helps to improve the mood of pregnant women, because the flavanol and methylxainithinie content can improve moods for the better. Consuming at least 30 grams of chocolate per day during pregnancy can optimize the growth and development of the fetus in the womb (Wulandari, 2019).

The results of the LiLa measurement in respondent I showed an increase, with the LiLa at the first visit being 21 cm, and an increase at the third visit to 23 cm. This indicates that the LiLa in respondent I, who was intervened with Oatbts (Oat 8 Choco Hazel) biscuits, increased by 2 cm. In this case, the respondent still falls into the KEK category.

According to the researcher's assumption, based on the results of a study conducted on pregnant women in the first trimester with KEK who were given an intervention of Oatbts (Oat 8 Choco Hazel) biscuits for 30 days, there was a significant increase in the respondents' body weight. This is because Oatbts (Oat 8 Choco Hazel) biscuits are a supplementary food with a high calorie content, making them suitable as a PMT for pregnant women with KEK and have been proven effective in helping increase the weight of pregnant women with KEK.

The Effect of SGM Bunda Milk on Weight Gain in First-Trimmer Pregnant Women with Chronic Energy Deficiency (KEK) at the 2024 Pregnant Women's Health Program (PMB S) in Bogor

Based on the results of a study on respondent II who received SGM Bunda milk, the weight was 50 kg at the first visit, increased to 55 kg at the second visit, and then increased again to 56 kg at the third visit.

In this study, respondent II received SGM Bunda milk. SGM Bunda pregnancy milk contains High-Iron, a high-iron formulation. One glass of SGM Bunda is equivalent to 10 glasses of fresh cow's milk. This ensures adequate iron intake for fetal development. Furthermore, one glass of SGM Bunda provides complete nutrition, containing DHA, a source of protein, high levels of folic acid, and essential vitamins to help maximize the development of the unborn child. This milk contains calories and vitamins needed by pregnant women. 200 ml of SGM Bunda milk contains 160 kcal (Anggita, 2018).

In a study conducted by (Nurpadilah, 2018) on "Provision of Supplementary Food and Milk on Weight Gain in Pregnant Women with Chronic Energy Deficiency (KEK) in Tangerang," the average weight before treatment was 44 kg with a standard deviation of 3.19 and after treatment, the average weight was 46 kg with a standard deviation of 2.94. An average weight gain of 1.813 was also observed. Furthermore, a P value of 0.000 <0.05 was obtained, indicating a significant effect between before and after treatment in the form of pregnancy milk.

According to the researcher's assumption, based on the results of the study conducted on first-trimester pregnant women with KEK who were given a 30-day intervention in the form of SGM Bunda milk, there was a significant increase in the respondents' weight. This is because SGM Bunda milk is easy to consume, comes in two delicious flavors, namely chocolate and strawberry, and does not cause side effects such as nausea, resulting in an increased appetite. SGM Bunda pregnancy milk can be continuously consumed as PMT to fulfill the vitamin and mineral needs, especially for pregnant women in the first trimester with KEK and has been proven effective in helping increase the weight of pregnant women with KEK.

Comparison of Giving Oatbits Biscuits (Oat 8 Choco Hazel) and SGM Bunda Milk on Weight Gain in First Trimester Pregnant Women with KEK (Chronic Energy Deficiency) at PMB S in Bogor in 2024

Based on the research results, it was found that pregnant women in their first trimester with chronic energy deficiency (CED) who were given SGM Bunda milk intervention experienced greater weight gain compared to pregnant women in their first trimester with CED who were given Oatbts biscuits (Oat 8 Choco Hazel). The results of the study compared weight gain before and after administration of Oatbts biscuits (Oat 8 Choco Hazel) and SGM Bunda milk.

Weight gain between respondents given Oatbts biscuits (Oat 8 Choco Hazel) and respondents given SGM Bunda milk showed a difference in weight gain. This study aligns with research conducted by (Nurpadlah, 2018) in Tangerang that found a significant difference in weight gain of pregnant women before and after being given supplementary food and milk for pregnant women in the experimental group ($p<0.05$). Based on the results of the study on the effect of providing additional food and milk for pregnant women on weight gain for pregnant women in the working area of Curug Health Center, Tangerang Regency in 2018, it can be concluded that from the results of the study, the mean before treatment was 44 and after treatment, the average result was 46 kg, the mean of both was 1.813 with a standard deviation of 750. In addition, a P value of 0.00 <0.05 was also obtained, so there was an influence between before treatment and after treatment.

Based on the results of the study of the upper arm circumference (LiLa), it is known that in respondent I who was given intervention in the form of oatbts biscuits (Oat 8 Choco Hazel) the first visit with LiLa was 21 cm, and increased at the third visit to 22.5 cm. This indicates that respondent I who was given PMT in the form of oatbts biscuits (Oat 8 Choco Hazel) experienced

an increase in LiLa of 1.5 cm. Respondent I is still included in the KEK category where LiLa <23.5 cm. Meanwhile, LiLa in respondent II who was given PMT intervention in the form of SGM Bunda milk at the first visit was 22 cm, increasing at the third visit to 24.5 cm, this indicates an increase in LiLa in respondent II was 2.5 cm. This is in line with research conducted by (Rukman, 2021) on "The Effectiveness of Providing PMT Biscuits on Increasing

Upper Arm Circumference of Pregnant Women at Rengasdengklok Community Health Center, Karawang Regency" The statistical test is parametric using Independent T-test on The results of the analysis using independent T-test to test 2 intervention and control groups, after consuming 28 packs of PMT biscuits, the p-value in the control group posttest = 0.342>α (0.0) is not significant, meaning that LiLa in the control group is still in the KEK category while the results of the analysis in the intervention group posttest P-value = 0.000 <α (0.05) which means there is an effect of the upper arm circumference of KEK pregnant women after consuming 56 packs of PMT biscuits regularly.

Researchers assume that there is a difference in weight gain between giving additional food in the form of oatbts biscuits (Oat 8 Choco Hazel) and SGM Bunda milk, because in 1 glass of SGM Bunda milk contains DHA, a source of protein, high in folic acid, and important vitamins to help maximize the development of the future baby. In 200 ml of SGM Bunda milk contains 160 kcal. While calories Oatbts (Oat 8 Choco Hazel) biscuits contain 130 kcal per serving (3 biscuits). This calorie content per serving is what contributed to the difference in weight gain in this study.

V. CONCLUSION

Based on the results of a study on the Effect of Oatbits Biscuits (Oat 8 Choco Hazelnut) and SGM Buinda Supplements on Weight Gain in First-Trim Pregnant Women with Chronic Energy Deficiency (KEIK) in the 2024 PMB S in Bogor, the following conclusions can be drawn:

1. There was an increase in weight in first-trimester pregnant women with KEIK (KEIK) after being given Oatbits Biscuits (Oat 8 Choco Hazelnut), with weight gain from the first visit (40 kg/L/21 cm) to the third visit (45 kg/L/22.5 cm).
2. There is an increase in body weight in the first trimester of pregnancy with KEiK (Chronic Energy Deficiency) after being given SGM buninda injections with weight gain from the first visit of 50 kg LiLa 22 cm to the third visit of 56 kg LiLa 24.5 cm.
3. The first trimester of pregnancy with KEiK who were given SGM buninda injections experienced faster weight gain compared to the first trimester of pregnancy with KEiK who were given oatbits biscuits (Oat 8 Choco Hazeil).

Addition: We are grateful for those and/or institutions that support research.

VI. REFERENCES

Amalia, F. (2021). Hubungan usia, Pendapatan Keluarga, Dan Pengeluaran Pangan Dengan kejadian Kekurangan energi kronik (KEK) Pada Ibu hamil D Kota Makassar Tahun 2020.

Anggita, R. (2018). Pengaruh Kualtas Produk, Kualtas Pelayanan, Dan Harga Terhadap Keputusian Pembelan Produk Susu Sgm Bunda.

Anugrah Novant, T. P. (2022). Efektvtas Program Pemberan Makanan Tambahan Pada Ibu hamil Kekurangan energi kronikd Puskesmas Ckupa, Kabupaten Tangerang. Volume 2, Issue.

Charuninsa, R. (2020). Efektftas Pemberan Susu Kacang Tanah Terhadap Status Gz Ibu hamil Kurangenerg kronik (KEK) D Wlayah Kerjapuskesmas Pancur Batu Tahun 2020.

Chor Elsera, A. M. (2021). Faktor Penyebab Kekurangan energi kronik (KEK) Pada Ibu hamil: Studylterature.

Dedy Setyabudi, B. P. (2020). Identfkas Penyebab Keterlambatan Waktu Pemelharaan Mesn Produks Dengan Lean Manufacture D Perusiahaan Pengolahan Susu. Semnar Nasonal Inovas Teknolog Isbn : 978-602- 61393-0-6 Un Pgr Kedr.

Direktorat Bina Gz. (2019). Petunjuk Tekns Makanan Tambahan Balta Dan Ibu hamil. . Isbn 978-602-416-754-7.

Eitka Widya Krisnaningrum, S. D. (2023). Efektvtas Pemberan Susu Uht Terhadap Ibu hamil Kekurangan energi Krons (KEK) Trmester I D Puskesmas Batu Betumpang Tahun 2022. Sentr I: Jurnal Rset Ilmah, Vol. 2, No.5.

Fadilla Yahya, I. (2023). Evaluas Program Pemberan Makanan Tambahan Pada Ibu hamil Kekurangan energi Krons D Wlayah Kerja Puskesmas Kapau Kabupaten Agam Tahun 2022. Repstory Unverstas Jamb.

Fitri Juliasari, E. F. (2020). Pemberian Makanan Tambahan (Pmt) Dengan Kenakan Berat Badan Ibu hamil KEK. Jurnal Materntas Asyah (Jaman Asyah), 27-31.

Hamdin, H. &. (2022). Faktor Yang Berhubungan Dengan Kekurangan energi kronik (Kek) Pada Ibu hamil D Wlayah Kerja Puskesmas Donggo Kabupaten Bma Tahun 2020. Skes: Jurnal Kesehatan Masyarakat, 21(1).

Harna, R. H. (2022). pelatihan Pembuatan Makanan Tambahan Ibu hamil Kek Berbass Pangan. Jurnal Pengabdan Kepada Masyarakat, Vol.02, No.03, September 2022, Pp. 1637-1644.

Hernawati. (2022). Analss Aktvtas Antoksdan, Uj Organoleptk, Kandungan Gz Cookes Dengan Penambahan Pasta Ub Jalar Ungu (Ipomoea Batatas) Dan Tepung Oat (Avena Satva).

Indra Nanda, E. A. (2021). Metode Peneltan Dan Analss Data Comprehensve. Crebon: Insana.

Indrat Ftranngtyas, F. D. (2019). Faktor-Faktor Yang Berhubungan Dengan kejadian Kurang energi Krons (KEK) Pada Ibu hamild Puskesmas Warung Jambu Kota Bogor . Hearty Jurnal Kesehatan Masyarakat Vol.6 No.2 2019.

Kemenkes. (2021). Laporan Knerja Kementran Kesehatan Tahun 2020.

Kementran Kesehatan R, 1–209.

Kemenkes. (2021). Laporan Kinerja Kementran Kesehatan Tahun 2020.

Kementran Kesehatan R., 1–209.

Kemenkes, R. (2019). Laporan Riskesdas 2018 Nasional. Pdf. 2019. P. 674.

Muhamad Z, H. H. (2019). Analsis Kebebasaan Makan Pada Ibu hamil Kekurangan energi kronik Di Wilayah Kerja Puskesmas Pulubala Kabupaten Gorontalo. J Komunitas Kesehatan Masy, 1(1):48–58. .

Nurpadilah, V. S. (2018). Pemberian Makanan Tambahan Dan Susu Terhadap Penambahan Berat Badan Pada Ibu hamil KEK (Kekurangan energi Kronis) Di Tangerang Tahun 2018.

.