Journal of Community Engagement in Health
https://jceh.org/ https://doi.org/10.30994/jceh.v8i1.713
ISSN: 2620-3758 (print); 2620-3766 (online) Vol. 8 No 1. March 2025. Page. 105 - 111

Education for Breastfeeding Mothers with Hypoglycemia

Yuliana[1*], Idawati[2], Meliani Sukmadewi Harahap[3]
[1,2] *Department of Midwifery, STIKes Medika Nurul Islam, Indonesia*
[3] *Department of Nursing, Polytechnic Ministry of Health, Aceh, Indonesia*
[*]*Corresponding author: yuli_yudia89@yahoo.co.id*

ABSTRACT
Hypoglycemia is a pathological condition with blood glucose levels showing a value of < 70 mg/dl or ≤ 3.9 mmol/L accompanied by clinical symptoms in the patient. Hypoglycemia in breastfeeding mothers can cause several impacts, including disruption of breast milk production, fatigue, stress and nutritional balance disorders. The 2023 Indonesian Health Survey found that hypoglycemia is more commonly found, both in the productive age group (18-59 years) and the elderly (60 years and above). The percentage of hypoglycemia was found in 52.1% of the productive age group, and in 48.9% of the elderly age group. The purpose of this community service is to provide health education to breastfeeding mothers with hypoglycemia. The method that will be used in this community service activity is education for breastfeeding mothers. The results of the analysis showed that the mother had hypoglycemia since adolescence, irregular sleep patterns and the mother often consumed caffeine, irregular diet, due to the irregular lifestyle so that an examination was carried out and the results of the mother's glucose reached 56 mg/dl, the results showed that the mother's glucose was low, education was carried out on the mother, the results of the mother's knowledge increased and had begun to implement a healthy lifestyle, The mother did not consume caffeine and a glucose test was carried out at 105 mg/dl.

Keywords: breastfeeding, diet, education**,** glucose**,** hypoglycemia

Received: January 8, 2025
Revised: February 11, 2025
Accepted: March 28, 2025

INTRODUCTION

Hypoglycemia is a pathological condition where blood glucose levels show a value of ≤ 70 mg/dl or ≤ 3.9 mmol/L accompanied by clinical symptoms in patients (Alghamdi et al, 2020). The condition of hypoglycemia can occur acutely and suddenly so that it can be life-threatening and can even result in death due to a lack of blood glucose reserves which are a source of energy for the brain and other body cells (Matyka, 2021). Hypoglycemia is characterized by Whipple's triassic, namely there are consistent signs of hypoglycemia, blood glucose level measurement shows low blood sugar levels, there is an improvement in symptoms after blood sugar levels are increased (Musniati, 2021).
Hypoglycemia can occur in all races, almost all children and adolescents with hypoglycemia have a body mass index (BMI) above the 85th percentile according to age and gender. Moelyo et al. reported that the number of child and adolescent hypoglycemia in Indonesia

was 38 people in 2019-2020, due to incomplete data collection so that the actual data is estimated to be larger. The 2023 Indonesian Health Survey found that hypoglycemia is more commonly found, both in the productive age group (18-59 years) and the elderly (60 years and above). The percentage of hypoglycemia was found in 52.1% of the productive age group, and in 48.9% of the elderly age group. (Kemenkes RI, 2024).

The dangerous low blood sugar is less than 54 mg/dL or 3.0 mmol/L. Hypoglycemia, or low blood sugar levels, is classified in three levels based on its severity (Tack, 2022). Level 1 hypoglycemia occurs when blood sugar levels are less than 70 mg/dL (3.9 mmol/L) but more than or equal to 54 mg/dL (3.0 mmol/L). Level 2 hypoglycemia occurs when blood sugar levels drop below 54 mg/dL (3.0 mmol/L) and can cause neuroglycopenic symptoms. While Hypoglycemia level 3 occurs when there is a change in mental or physical function, requires help from others for the healing process, and rarely occurs in people with type 1 diabetes who use insulin. (Dinkes RI, 2023).

Hypoglycemia that is not treated immediately can cause various complications, including: Dizziness and loss of balance so that there is a risk of accidents, seizures, decreased consciousness, decreased consciousness and permanent brain defects. In Indonesia based on research Pratiwi et al (2021) stating that a person with hypoglycemia therapy such as insulin and/or sulfonylurea, inadequate oral nutrient intake or a previous history of hypoglycemia are factors contributing to the incidence of hypoglycemia (Van Beek, 2020). Hypoglycemia in breastfeeding mothers can cause several impacts, including: Disturbances in milk production, Fatigue and Stress, Disturbances in Nutritional Balance. (Ferry, 2019) (Pratiwi, 2020).

Based on the results of data collection carried out by the author on the assisted families in ulee ceue keulibeut village, Pidie district, Pidie regency, it was found that breastfeeding mothers with hypoglycemia were 1 person, the mother said that she had experienced hypoglycemia since she was a teenager, the mother often felt dizzy and weak, blood sugar check was 56 mg/dl, the mother often consumed coffee which became a routine every day (Toft-Nielsen, 2022). Based on this statement, it is necessary to educate mothers, education is carried out on mothers by conveying about hypoglycemia, a good diet for breastfeeding mothers with hypoglycemia, avoiding drinks containing caffeine and also rest patterns (Abrahamsson, 2022). From the education, it was further evaluated that the mother had implemented a healthy diet, the mother did not consume caffeine but the mother's sleep pattern was still irregular because she had a child who was less than 1 year old, but the results of the education carried out were an increase in knowledge and behavioral changes in the mother, the results of the blood sugar test after education were 105 mg/dl.

METHODS

Community service activities will be carried out in January 2025 in the village of ulee ceue Keulibet. This method of activity is carried out with lectures/Health Education, questions and answers, and discussions. Another approach is carried out in a qualitative way to explore information related to hypoglycemia and is also carried out observationally or field surveys to see the real conditions in the field so that they are known correctly. Furthermore, education is carried out by including families, those in the village, village midwives, education is carried out with the topic of hypoglycemia in breastfeeding mothers, followed by discussions or questions and answers. The results of the counseling will then be evaluated directly at the pregnant woman's home for review.

RESULTS

Based on the results of community service activities on education for breastfeeding mothers with hypoglycemia, maternal data was obtained as follows

Table 1. Distribution by Age and Gender in Assisted Families in Ulee Ceue Keulibeut Village, Pidie District, Pidie Regency in 2025

No	Age Group	Man	Woman	Total	%
1	0-12 moon	1	1	2	33,34
2	1-5 Year				
3	6-15 Year				
4	16-25 Year				
5	26-45 Year		1	1	33,33
6	46-59 Year	1		1	33,33
7	60 year and above				
	total			4	100%

Based on the table above, it shows that the assisted families based on the age category in Ulee Ceue Village, Nibong Hamlet are 3 people (100%), in the age category of 0-12 months 2 people (33.34%) and in the age category of 26-45 1 person (33.33%) and in the age category of 46-59 1 person (33.33%)

Table 2. Distribution of Family Health Status for the Last 6 Months (All Types of Illnesses)

No	Name	Age	Gender	Jenis Disease	Place Treatment
1	Adani	46 Year	Man	-	-
2	Mutia	40 Year	Woman	Hipoglikemia	-
3	Alamarhum By.M	-	Woman	Entangled umbilical cord	-
4	M. Djibril Al-Bilal	10 Moon	Man	-	-

Based on the health status table above, it shows that the type of disease that exists in the fostered family is Hypoglycemia.

Based on the results of data analysis in families with hypoglycemia, the mother does not know what foods should not be consumed by hypoglycemia sufferers, the signs caused by the mother often feel dizzy and weak, irregular sleep patterns and blood sugar checks obtained low results of 56 mg.dl (Danowitz, 2022). So that the right education is given to mothers and families is to educate about good foods to consume so that blood sugar is not low, foods that must be avoided, encouraging mothers to consume foods and drinks that are high in sugar. such as warm rice, sugar water, juice, as well as fruits such as apples, grapes or oranges, educate about hypoglycemia and the causes of hypoglycemia, and signs and symptoms.

Figure.1 Education in foster families

Based on these priorities, it can be studied through the priority score of the problem where it is studied based on the nature of the problem will be a health threat if you do not know about the dangers of hypoglycemia in breastfeeding mothers with a score of 2/3, the possibility of problems can be changed if the mother's diet is likely to change after education will change and if the mother can carry out a healthy diet with a priority score of 1/2, Potential problems can be prevented if you want to change a healthier lifestyle because you already know one of the ways to prevent hypoglycemia, namely by maintaining a healthy diet to obtain a score of 1, and the prominence of problems if you have a poor diet So it must be changed so that it does not worsen the score of 2 1/2 so that the total priority score of the problem is 5 1/2 (Cryer, 2023).

Based on the priority score of the problem, the implementation is carried out by providing education to mothers with the aim that mothers understand and have increased knowledge to prevent hypoglycemia, interventions and implementations are given in the form of the importance of maintaining a diet, how to overcome hypoglycemia, the impact of hypoglycemia on breastfeeding mothers. Furthermore, an evaluation was carried out after 8 days of education was obtained, the results of the mother already knew about hypoglycemia, the causes and prevention of hypoglycemia, a healthy lifestyle had begun to be implemented, drinks containing caffeine were no longer consumed, sleep patterns had begun to be regular, the results of the mother's blood sugar examination increased by 105 mg/dl (Michail, 2022).

Figure 2 Blood sugar before education

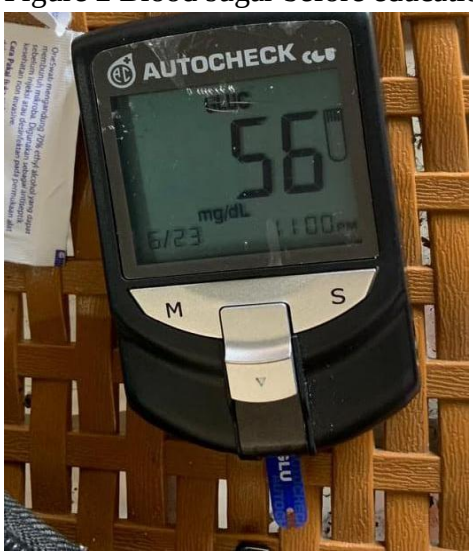
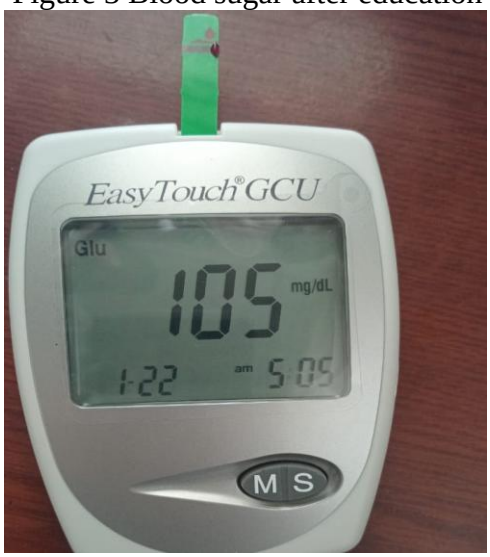


Figure 3 Blood sugar after education



DISCUSSION

Hypoglycemia is a condition of decreased serum glucose concentration with or without symptoms of autonomic system and neuroglycopenia. Hypoglycemia is characterized by a decrease in blood glucose levels of less than 70 mg/dl (Ellen, 2025). This hypoglycemia has complex consequences for patients, including disruption of the central nervous system which causes sufferers to experience dizziness, headaches, chaotic thoughts, irritability, seizures and even a decrease in consciousness (Weinstock, 2024). In addition, hypoglycemia can also result in several cardiovascular disorders such as blood coagulation or blood clotting disorders, the presence of inflammation or inflammation, endothelial dysfunction, activation of the sympathetic nervous system (cold acral, palpitations), psychological impact (difficulty sleeping or eating) and even death (Amiel , 2021).

According to research conducted by Alghamdi, 2020 The impact of hypoglycemia on breastfeeding mothers includes disruptions in milk production because it can interfere with the function of the mammary glands, cause fatigue and stress, and disturbances in nutritional balance so as to affect the quality of milk produced (Alghamdi, 2020).

Based on the author's assumption, hypoglycemia needs to be handled quickly and appropriately so as not to damage the most important human organs, especially the brain. Lowering blood glucose levels below normal has an acute effect on brain function because the brain is so dependent on glucose that it cannot store glucose stores for metabolism. Brain cells are ischemic if they don't receive oxygen and glucose for four to six minutes and can cause permanent brain damage if it's more than 10 minutes. In addition to the fact that hypoglycemia can be life-threatening, hypoglycemia has a negative psychological impact on the patient and his or her diabetes management.

The nature of the emergency is immediate, so the family needs to know the common signs and symptoms of hypoglycemia so that the family can immediately take the patient to the hospital, this is also the family's task, namely to know the health problems in the family (Aprilia., 2021). The family has a family care function that can maintain the health of family members. One of them is the right way to treat the disease. In addition, the family will also provide support to the client, and through prompt and appropriate family care can prevent death and the worst illness in patients with hypoglycemia (Samya., 2019) (Nurhayati & Sari , 2021).

In hypoglycemia, appropriate and diverse strategies are needed as an effort to overcome the drop in blood glucose levels. One of the recommendations that emerged was to get enough rest and sleep. Rest and sleep play an important role in regulating insulin production (laura Holzen, 2024). Therefore, maintaining regular and quality rest and sleep patterns can be an important part of preventing and managing hypoglycemia. In addition, giving honey can also be an alternative in dealing with hypoglycemia. The fructose and glucose content in honey can be a source of energy and help restore low blood glucose levels. Because of this, giving honey is considered an option that can be applied quickly and easily when facing hypoglycemia situations (Dinda, 2025). The treatment of hypoglycemia needs to be tailored to the individual's condition and characteristics. Although it is known that rest, sleep, and consuming honey can help in the treatment of hypoglycemia, it would be better to still consult with a health professional, so that the approach is in accordance with the patient's condition and needs. Setting a diet with the right portions also has a crucial role in preventing hypoglycemia in DM patients. However, obstacles in providing inaccurate information often lead to the perception that patients have very strict boundaries (Berlan Chandra, 2025). This makes many patients focus more on restricting the type of food than understanding that what

is restricted is the number of calories needed to keep blood glucose levels stable (Komalasari dkk., 2023).

To prevent hypoglycemia, breastfeeding mothers can do several things, such as: Eat a Balanced Diet: Breastfeeding mothers should eat a balanced diet to maintain stable blood glucose levels. Breastfeeding mothers with hypoglycemia can consume fruits such as apples, grapes, bananas, oranges and raisins. In addition to consuming fruit, you can also consume vegetables because vegetables are foods that are high in fiber, such as potatoes, pumpkin and corn, Drink enough water to keep the body hydrated, Get enough rest to reduce stress and fatigue. (Artawan, 2021).

CONCLUSION

From the results of data collection carried out in January 2025, it was found that there were 1 lactating mother with hypoglycemia in Ulee Ceueu Keulibeut village, Pidie District, Pidie Regency. The author provides education to the fostered family, the education provided is how to overcome hypoglycemia by maintaining a healthy diet and avoiding consuming caffeine. From the results of the education, it was obtained that the mother's knowledge increased and began to change her lifestyle to be healthier, the previous mother's blood sugar check was 56 mg/dl, after the education was carried out there was an increase in maternal blood sugar, which was 105 mg/dl.

The suggestions from this community service education can continue to increase maternal awareness to prevent hypoglycemia by implementing a healthy lifestyle and conducting regular health check-ups in health services.

REFERENCES

Abrahamsson, E. (2022). Analogs as treatment of postprandial hypoglycemia following gastric bypass surgery: A potential new indication? *Eur. J. Endocrinol, 169*(12), 885–889.

Alghamdi. (2020). Hypoglycemic Risk Factors Among Hospitalized Patients with Type 2 Diabetes Mellitus at King Abdulaziz Medical City. *78*(43), 110-130.

Amiel. (2021). The consequences of hypoglycaemia. *Diabetologia, 64*(54), 963-970. doi:https://doi.org/10.1007/s00125-020-05366-3.

Aprilia., M. &. (2021). Overview of Family Knowledge of Hypoglycemia Emergencies in Patients with Diabetes Mellitus in the Working Area of the Cakranegara Health Center. *Health Journal, 15*(2), 45-5-.

Artawan, &. R. (2021). Overview of DM Patients' Knowledge About Signs and Symptoms of Hypoglycemia at Puskesmas 1 East Denpasar. *Medical Journal of Udayana Health, 7*(1), 10-12.

Berlan Chandra, W. P. (2025). 13. Alcohol Induced Hypoglycemia In Patient With Suspected Chronic Liver Dysfunction-A Case In Remote Area CDK. *CDK, 52*(2).

Cryer. (2023). Mechanisms of Hypoglycemia-Associated Autonomic Failure in Diabetes. *Engl. J. Med, 369*(24), 362–372.

Danowitz, D. L. (2022). Signaling in Hypoglycemia due to Hyperinsulinism. Front. . *Endocrinol, 13*(2), 863184.

Dinda. (2025). Hypoglycemia: Updates on Diagnosis and Treatment. *Indonesian Journal of Health Sciences, 6*(1).123-125.

Dinkes RI. (2023). *Indonesian Health Profile of the Year 2023*. Retrieved from Jakarta: Kemenkes RI.

Ellen. (2025). Workgroup on Hypoglycemia, American Diabetes Association. Defining and reporting hypoglycemia in diabetes: A report from the American Diabetes Association Workgroup on Hypoglycemia. Diabetes Care. *Midwifery, 28*(2), 1245–1249.

Ferry. (2019). Hypoglycemia (Low Blood Sugar). *EMedicineHealth, 10*(2), 15-20.

Kemenkes RI. (2024). *Indonesia Health Profile 2018 Kemenkes RI.* Retrieved from In Health Statistics.

Komalasari dkk. (2023). "Balance performance, fall efficacy, and social participation in individuals with type 2 diabetes mellitus with and without vestibular dysfunction.". *Jurnal Investigasi Diabetes, 5*(2).

laura Holzen, S. M. (2024). Hypoglycemia Unawareness—A Review on Pathophysiology and Clinical Implications. . *Biomedicines, 12* (2), 391.

Matyka. (2021). Hypoglycemia in children with type 1 diabetes: Nocturnal hypoglycemia in type 1 diabetes. . *Pediatri, 3*(1), 74–81.

Michail. (2022). Hypoglycemia-associated autonomic failure in diabetes. Am. *Journal Physiol Metab, 17*(3), E1115–E1121.

Musniati, A. (2021). Overview of Family Knowledge of Hypoglycemia Emergencies in Patients with Diabetes Mellitus in the Working Area of the Cakranegara Health Center. *Health Journal, 15*(2), 45-50.

Nurhayati & Sari . (2021). Hypoglycemia Knowledge Level with Hypoglycemia Detection Ability. In Indonesian. *Jurnal of Health Development, 5*(1), 1-5.

Pratiwi, M. I. (2020). The risk factors of inpatient hypoglycemia: A systematic review. Heliyon. *6*(5), 11. doi:doi: 10.1016/j.heliyon.e03913. PMID.

Samya. (2019). Prevalence of Hypoglycemia Among Patients With Type 2 Diabetes Mellitus in a Rural Health Center in South India. *Jurnal Prim Care Community Health, 16*(5).

Tack, A. (2022). Pathophysiology, diagnosis and management of postoperative dumping syndrome. Nat. Rev. Gastroenterol. . *Hepatol, 6*(5), 583–590.

Toft-Nielsen, M. (2022). Exaggerated secretion of glucagon-like peptide-1 (GLP-1) could cause reactive hypoglycaemia. . *Diabetologia, 16*(2), 1180–1186.

Van Beek, E. L. (2020). Dumping syndrome after esophageal, gastric or bariatric surgery: Pathophysiology, diagnosis, and management. Obes. *Obes, 18*(6), 68-85.

Weinstock. (2024). Risk Factors Associated with Severe Hypoglycemia in Older Adults with Type 1 Diabetes. Diabetes Care. *Obes, 28*(2).