



**NASKAH LENGKAP  
KONGRES NASIONAL VII  
PERHIMPUNAN DOKTER GIZI MEDIK INDONESIA**

**PERAN DOKTER GIZI MEDIK DALAM MENYELAMATKAN  
PERIODE SERIBU HARI PERTAMA KEHIDUPAN (1000 HPK)**

**Editor:**

**Nelly Mayulu**

**John Wantania**

**Diana V. D. Doda**

**Stefanus Gunawan**

**Nurdjannah Jane Niode**

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GIZI MEDIK INDONESIA**

Penyunting : Nelly Mayulu, John Wantania, Diana V.D. Doda, Stefanus Gunawan,  
Nurdjannah Jane Niode

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## Kontributor

Anung Sugihantono, dr. MKes  
Dijen Kesehatan Masyarakat, KemenKes-RI

Soetedjo, dr. Sp.S (K)  
Wakil Ketua MKEK PB-IDI

Atmarita, dr. MPH, PH  
DPP-PERSAGI

Aryono Hendarto, dr. Sp.A (K)  
Departemen IKA FKUI

Prof. Dr. Nurpudji Astuti, dr. MPH, Sp. GK (K)  
Ketua PP-PDGKI/FK-Unhas

Dr. John Wantania, dr. Sp. OG (K)  
Bagian Kebidanan dan Kardungan FK Unsrat

Johany Rompis, dr. Sp. A (K)  
Bagian Ilmu Kesehatan Anak FK Unsrat

Dr. Hesti Lestari, dr. Sp. A (K)  
Bagian Ilmu Kesehatan Anak FK Unsrat

Dr. Muchsin Pasambuna, SPd, MSI  
Pergizi Pangan-SULUT

Gustaaf A.E. Ratag, dr. MPH  
Bagian Ilmu Kesehatan Komunitas FK Unsrat

Arta Farnawati, dr  
Fakultas Kedokteran UGM

Dr. Nelly Mayulu, dr. MSI.  
Bagian Ilmu Gizi FK Unsrat

Dina V. Rombot, dr. MKes  
Bagian Ilmu Kesehatan Komunitas FK Unsrat

Adisti A. Rumayar, dr  
Fakultas Kesehatan Masyarakat Unsrat

Dr. Ir. Trini Sugiarti, MSi  
Fakultas Kesehatan Masyarakat UI

Elvina Karyadi, dr. MSc, Ph  
PDGMI /Nutrition International

Rina Agustina, dr. MSc, PhD  
Departemen Ilmu Gizi FKUI

Prof. Dr. Abd. Razak Thaha, dr. MSc, Sp. GK  
Fakultas Kesehatan Masyarakat Unhas

Prof. Dr. Max F.J. Mantik, dr. Sp. A (K)  
Bagian Ilmu Kesehatan Anak FK Unsrat

Dr. Aria Kekalih, dr. MSi  
PP-PDGMI/FKUI

Hanna Monareh, SPsi, MPsi  
RSUP Prof. Dr. R.D. Kandou Manado/Pusat Layanan  
Autis SULUT

Stefanus Gunawan, dr. Sp. A (K), MSi. Med.  
Bagian Ilmu Kesehatan Anak FK Unsrat

Novie H. Rampengan, dr. Sp. A (K), DTM&H,  
MCTM (TP)  
Bagian Ilmu Kesehatan Anak FK Unsrat

Mochammad Ilham Nikasah  
Departemen Ilmu Kesehatan Masyarakat FK Unpad

Nancy S.H. Malonda, dr  
Fakultas Kesehatan Masyarakat Unsrat

Diana V Doda, dr. MOHS, PhD  
Bagian Fisiologi FK Unsrat

Thigita A Pandaleke, dr. Sp. KK  
Bagian Ilmu Kesehatan Kulit dan Kelamin FK Unsrat

Citrakesumasari  
Bagian Ilmu Kesehatan Komunitas FK Unhas



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## Maternal Nutritional Factors which related with Macrosemia in Manado City

*Nelly Mayulu*

### Background

Birth weight is an indicator that reliably predicts survival in neonates and infants, both in terms of physical growth and development of his mental status. In addition, the baby's birth weight may be used as a general indicator to determine the status of health, nutrition and social economy developed countries and developing countries (RRS Phaneendra et al, 2001).

Birth of macrosomia will cause complications in childbirth as well as long-term complications, especially if giving birth is not handled by the hospital include maternal complications such as childbirth bleeding, infection, sectio cesarean, pre-eclampsia, while the risks that threaten the baby at birth is experiencing dystocia and perinatal death (Conrad K & Martha MW, 2007). Infant macrosomia can lead to postpartum hemorrhage due to uterine overstretch and resulting in weak contraction that can occur post partum bleeding, respiratory disorders, trauma to the neck and shoulders due to a difficult baby through the pelvis of the mother. For long-term complications such as obesity, diabetes mellitus and neurological problems (Chauhan & Magann 2007).

Based on the results of the Basic Health Research (Riskesdas) prevalence of obesity in the population of North Sulawesi province is the highest of all provinces in Indonesia and have increased in each Riskesdas. Riskesdas in 2010 (>18 years population) the prevalence of obesity North Sulawesi's population is higher (21.9%) of the average prevalence of obesity for residents of Indonesia (11.7%) (Ministry of Health, 2011). In Riskesdas in 2013 (>18 years population) found 24% of the adult population of North Sulawesi province are obese, while the average for the population of Indonesia is 15.4%, this shows the prevalence of obesity in 2013 the population of North Sulawesi province is higher than average the prevalence of obesity for residents of Indonesia (Ministry of Health, 2014).

According to Chauhan and Magann (2007), some of the factors triggering the problem of macrosomia is genetic, environmental, lifestyle, and socioeconomic status, maternal weight before and during pregnancy, BMI of pregnant women, age, height mothers and blood sugar levels. Meanwhile, according to Manurung (2010), three main factors that can lead to infant macrosomia is the first genetic or hereditary factors, both maternal weight gain too much

because of the pattern of unbalanced nutrition and the third was a pregnant woman with diabetes mellitus. The daily diet is a diet a person associated with the eating habits every day. The habit of eating foods that contain high in carbohydrates, protein and fats in pregnant women can cause birth suspected macrosomia (Langer WR O and Cohen, 2000).

During 2012 there were 251 macrosomia in 5258 births in Manado City. Maternal obesity as a risk factor for macrosomia in a few years always increase in North Sulawesi. This study aimed to analyze maternal food intake, maternal history of diabetes, and parity factors.

### **Methods**

This study was an observational analytic study. The study design was selected to determine the risk factors for birth macrosomia (carbohydrate, fat, protein, maternal diabetes mellitus, and parity). This study used a retrospective study approach, meaning that the effects are identified at this time, while the identified risk factors exist or occurrence in the past. The experiment was conducted in March until May 2015 at the General Hospital, Health Center and Maternity Clinic in the Manado city.



*Table 1. characteristics*

Characteristic	Macrosemia Cases	
	n	%
<i>Maternal Age</i>		
>35 years old	9	20,5
<35 years old	35	79,5
<i>Pregnancy age</i>		
36-37 weeks	10	22,7
38-39 weeks	13	29,5
40-41 weeks	21	47,7
<i>Parietas History</i>		
>4 birth	8	18,2
<4 birth	36	81,8
<i>Number of Children</i>		
>2 children	10	22,7
<2 children	34	77,3
<i>Mothers education</i>		
Low educated	13	29,5
High educated	31	70,5
<i>Mothers employment status</i>		
Unemployed	33	75
Employed	11	25
<i>Husband Education</i>		
Low educated	17	38,6
High educated	27	61,4
<i>Husband employment status</i>		
Unemployed	0	0
Employed	44	100
<i>Delivery Methods</i>		
Sectio cesarea	35	79,5
Spontaneous	9	20,5
<i>Diabetic History</i>		
Diabetic	28	63,6
Non Diabetic	16	35,4
<i>Maternal Body Height</i>		
<155 cm	24	54,5
>155 cm	20	45,5
<i>Maternal Blood Pressure</i>		
Non Hypertensive	40	90,9
Hypertensive	4	9,1
<i>Birthweight</i>		
>4000 gr	44	100
<4000 gr	0	0
<i>Carbohydrate Intake</i>		
Adequate	27	61,4
Inadequate	17	38,6
<i>Fat Intake</i>		
Adequate	25	56,8
Inadequate	19	43,2
<i>Protein Intake</i>		
Adequate	35	79,5
Inadequate	9	20,5

## **Results**

There are 44 respondents in which the respondents were adequate carbohydrate intake 93.1% delivered macrosomia and 6.9% normal, while respondents were inadequate carbohydrate intake as much as 28.8% delivered macrosomia and 71.2% normal. The study design was selected to determine the risk factors for birth macrosomia (carbohydrate, fat, protein, maternal diabetes mellitus, and parity). This study used a retrospective approach, meaning that the effects are identified at this time, while the identified risk factors exist or occurrence in the past.

## **Conclusions**

High intake of carbohydrates, fats and maternal diabetes history are risk factors for macrosomia. High intake of protein and maternal parity history is not a risk factor for macrosomia



# SERTIFIKAT

Diberikan Kepada

**NELLY MAYULU**

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Ketua PP-PDGMI

Prof. dr. Endang L. Achadi, MPH, Dr.PH

Panitia Kongres Nasional

Dr. dr. Nelly Mayulu, MSi