JURNAL FUSION
Vol 4 No 02, Februari 2024
E-ISSN: 2775-6440 | P-ISSN: 2808-7208
Jurnal Homepage https://fusion.rifainstitute.com

RELATIONSHIP BETWEEN PRE-ECLAMPSIA AND UNDERWEIGHT BABY IN THE OBSTETRICS UNIT OF GUIDO VALADARES NATIONAL HOSPITAL IN 2023

Ana Claudia da Costa Guterres, Elisa de Deus, Rafael dos Santos Ximenes, Odelia Soares Amaral, Teresa de Jesus Vaz Cabral, Antonio Ximenes
National University of Timor Lorosa'e. Department of Midwifery
Email: claudiaguterres5@gmail.com, joyelyna01@gmail.com, rafaelximenes1964@gmail.com, Odeliasoaresamaral25@gmail.com, teresavazcabral@gmail.com, ximenes085@gmail.com

Abstrack

Pre-eclampsia is a serious complication that affects the mother's body, childbirth, a ndpostpartum.It is characterized by signs such as hypertension, edema, and protein uria that occur during the 20 weeks of pregnancy. An underweight baby is a baby w ho weighs less than 2500 grams. According to data from the Timor-Leste Demograp hic Health Survey (TLDHS) in 2016, 215 mothers had pre-eclampsia and 72 babies died with underweight status. Pre-eclampsia is one of the complications that kills m others with a high percentage of 25% and a frequency of 42.According to data from Guido Valadares National Hospital in 2021, 174 mothers had pre-eclampsia and 5 8 babies were underweight. To understand the relationship between preeclampsia a nd underweight baby incidents. This is a descriptive quantitative research with a cr osssectional approach. The technique used was Accidental Sampling, with a sample of 64 respondents. The results show that there is a relationship between pre-eclamp sia and underweight baby incidents. 46 mothers (71.9%) had preclampsia and 36 b abies (78.3%) were underweight. The relationship between preeclampsia and under weight baby incidents had a p-value of 0.03. Conclusion: This research shows that t here is a relationship between preeclampsia and underweight baby incidents. The in formation obtained can be used to improve the quality of service provided to mother s with specific focus on pre-eclampsia and underweight babies.

Keywords: *Pre-eclampsia, underweight baby.*

Diserahkan: 20-01-2024; Diterima: 05-02-2024; Diterbitkan: 22-02-2024

INTRODUCTION

Asih 2013, Pre-eclampsia was identified as a deeprooted symptom that occurs in mo thers with dual bodies during childbirth and postpartum that comes with indications such a s hypertension, edema, and proteinuria that emerge during the first 20 weeks of pregnancy (Astuti, 2015). Pre-eclampsia typically occurs in mothers with dual bodies during the third t

DOI : https://doi.org/10.54543/fusion.v4i02.400
Published by : Rifa Institute

rimester, characterized by low arterial pressure, edema, and proteinuria. If a baby is born un derweight, defined as less than 2500 grams, it is not attributed to the gestational age (Yada & Shrestha, 2011).

According to Rahyani, 2020, Pre-eclampsia is a condition that develops during preg nancy or postpartum, characterized by symptoms such as hypertension, proteinuria, and ede ma. The diagnosis of Pre-eclampsia is based on hypertension and proteinuria during the 20t h week of gestation.

Rahyani 2020 Pre-eclampsia is the primary cause of maternal mortality and is associ ated with the incidence of underweight baby deaths. Babies born underweight, defined as le ss than 2500 grams, are not attributed to the gestational age.

Nita & Mustika, 2013 stated that the factors behind Pre-eclampsia have not yet been detected, but some risk factors associated with Pre-eclampsia are as follows: maternal age, primigravida, multigravida, twin pregnancy, obesity, hypertension, and diabetes mellitus. Mitayani, 2013, reported the complications of Pre-eclampsia that affect the condition of the baby and inhibit the growth of the baby in the uterus, causing underweight birth, neonatal a sphyxia, stillbirth, and premature birth.

According to the World Health Organization (WHO), 2015, the prevalence of Pre-e clampsia among mothers worldwide ranges from 0.51% to 38.4%, and the incidence of babi es born underweight with Pre-eclampsia is 15%. Many advanced countries have higher rate s of underweight baby births associated with the incidence of Pre-eclampsia, with the incid ence of Pre-eclampsia ranging from 6% to 7% and the incidence of underweight baby births ranging from 2% to 4%. Babies born underweight are at a higher risk of maternal mortality . Babies born underweight are at a higher risk of death compared to babies born with a nor mal weight.

According to Gilbert and Harmon (2014), in ASEAN, pre-eclampsia increased over time and in mothers with pre-eclampsia, 1,355 births resulted in underweight babies (11.66 %). In 2015, 1,228 cases of underweight babies were recorded out of all births by mothers with pre-eclampsia (11.72%). Based on research by Primayanti (2016), there is a significa nt relationship between preeclampsia and the incidence of underweight babies. There were 164 mothers with pre-eclampsia, of which 40.2% had mild pre-eclampsia and 59.8% had se vere pre-eclampsia. Out of these, 106 cases resulted in underweight babies, accounting for 64.6% of total births, while babies born with even lower weight accounted for 34.1% (56 ca ses) and extremely underweight babieswere only 1.2% (2 cases).

According to the TimorLeste Demographic Health Survey (TLDHS) in 2016, 215 c ases of preclampsia were recorded, of which 72 resulted in underweight babies and 25% of these pre-eclampsia cases led to the death of the mother. Data from the National Hospital G uido Valadares in 2021 recorded 174 cases of pre-eclampsia resulting in 58 underweight ba bies. Researchers are taking the initiative to study the relationship between pre-eclampsia a nd the incidence of underweight babies at the National Hospital Guido Valadares in Dili in 2023.

RESEARCH METHODOLOGY

Type of research Descriptive quantitative research is a type of research that aims to describe a phenomenon in numerical form. In this research, the writer used a Quantitative D escriptive Analytical method with a Crossectional approach to understand the Relationship between Preeclampsia and Underweight Baby Incidents. According to Notoatmodjo, 2018, the sampling technique used to take a sample is NonProbability Sampling and Accidental S ampling, which means the respondents who have encountered preeclampsia in the research site can be taken as a sample. The operational definition is an explanation that clarifies the l imitations of variables and how they are defined in the research.

RESEARCH RESULTS

Univariate analysis results

Table 1 shows the distribution of respondents' age according to the mother's age in t he Obstetrics Unit of the National Guido Valadares Hospital from April to May 2023.

Mother's Age	Frequency	Percentage %
Age 20-35	28	43,8%
Age <20 >35	36	56,3%
Total	64	100 %

Sources: Primary Data from 2023

Survey Results Based on Table 1 above, it shows that there were 36 people (56.3 %) who were of age less than 20 or more than 35, compared to 28 people (43.8%) who wer e of age between 20-35.

Education Level

Table 2 shows the distribution of respondents according to their education level in t he Obstetrics Unit of the National Guido Valadares Hospital from April to May in 2023.

Education Level	Frequency	Persentage %
No School	6	9,4 %
Primary School	15	23,4 %
Junior High School	17	26,6 %
High School	20	31,3 %
University	6	9,4 %
Total	64	100%

Sources: Primary Data Research Results 2023

Based on Table 2. Above, it indicates that there are more than 20 people (31.3%) wi th secondary education level who are mothers compared to those who have gone to universi ty, which is only 6 people (9.4%).

Table 3. Distribution of respondent parity in the Obstetrics Unit of the National Gui do Valadares Hospital from April to May 2023.

Parity	Frequency	Percentage %
Primigravida	31	48,4 %
Multigravida	33	51,6%
Total	64	100%

Sources: Research Results from Questionnaire 2023

Based on Table 3. Above, it shows that the result from the parity of multigravida chi ldren is 33 people (51.6%), which is higher compared to the result from primigravida moth ers, which is only 31 people (48.4%).

Table 4. Distribution of respondents according to occupation in the Obstetrics Unit of the National Guido Valadares Hospital from April to May 2023.

Occupation	Frequency	Percentage %
Iha Okupasaun	35	54,7%
La iha okupasaun	29	45,3 %
Total	64	100 %

Sources: Research Results from Questionnaire 2023

Based on Table 4. Above, it indicates that there are more mothers who have occupat ions, about 35 people (54.7%), compared to those who do not have an occupation, which is only 29 people (45.3%).

Table 5. Distribution of respondents according to mothers with preclampsia in the O bstetrics Unit of the National Guido Valadares Hospital from April to May 2023.

Pre-éklamsia	Frequency	Percentage %
Pre-éklamsia	46	71,9%
Non Pre-éklamsia	18	28,1%
Total	64	100 %

Sources: Research Results From Questionnaire 2023

Based on Table 5. The above shows that the results from mothers with Pre-Eclamp sia, a total of 46 people (71.9%), were much higher compared to Non Pre-Eclampsia mothe rs, a total of 18 people (28.1%).

Table 6. Distribution of Respondents, According to Baby's Weight at Birth Underw eight and Normal Weight Babies in the Obstetrics Unit of the National Hopsital Guido Vala dares April to May 2023.

Underweight Babies	Frequency	Percentage %
<2500 gramas	43	67,2%
>2500 gramas	21	32,8%
Total	64	100%

Sources: Research Results From Questionnaire 2023

Based on Table 6. The above shows that the results from underweight babies were much higher, with a total of 43 people (67.2%), compared to normal weight babies, a total o f 21 people (32.8%).

Table 7. Distribution of Respondents According to Pre-Eclampsia and NonPre-Ecla mpsia Mothers, with Underweight Babies in the Obstetrics Unit of the National Hospital G uido Valadares April to May 2023.

Pre eclampsia no Non Pre-eclampsia	Underweight Babies	Percentage %
Pre eclampsia	36	78,3 %
Non Pre-eclampsia	7	38,9 %
Total	28	100%

Sources: Research Results From Questionnaire 2023

Based on Table 7. The above shows that the results from Pre-Eclampsia mothers with underweight babies were much higher, with a total of 36 people (7 8.3%), compared to Non Pre-Eclampsia mothers, a total of 7 people (38.9%).

Bivariate Analysis

According to Notoatmodjo (2018), bivariate analysis is used to understand the relati onship between dependent and independent variables in this research. As for the data collec ted, statistical tests are carried out using Chi-square analysis (Purwanto, 2011).

Table 8. Relationship between Pre-Eclampsia and the Incidence of Underweight Ne wborns in Obstetrics Unit of the National Guido Valadares Hospital from April to May 2 023.

Pre eclampsia no Non Pre-eclampsia	Underweight Newborns		**Total**	**p-value**
	Normal >2500 gr	**Todan menus <2500 gr**		
Pre-eclampsia	10	36	46	0,03
	21,7%	78,3%	100%	

Non Pre-eclampsia	11	7	18
	61,1%	38,9%	100%
Total	21	43	64

Sources: Research results from questionnaire in 2023

Based on Table 8, it is shown that there were a total of 46 cases of underweight new borns from mothers with pre-eclampsia, of which 36 (78.3%) resulted in fetal death. Amon g mothers without preeclampsia, there were 18 cases with 7 (38.9%) resulting in fetal death . The result of the chisquare statistical test shows a small p-value of 0.03, which indicates a significant relationship between pre-eclampsia and the incidence of underweight newborns.

Discussion

Frequency Distribution of Pre-eclampsia and Non-pre-eclampsia Mothers

Based on Table 7 above, the results show that a total of 46 (71.9%) of the mothers with preeclampsia were much higher compared to the 18 (28.1%) mothers without pre-ecla mpsia. From these results, it can be seen that mothers with pre-eclampsia are much higher compared to those without pre-eclampsia. Pre-eclampsia is a serious health problem that oc curs to all women, especially to pregnant women.

Therefore, it requires special attention, especially to the bodies of both mother and f etus. Preeclampsia is a health problem that can affect anyone and can lead to other complic ations if not treated properly. According to Maryunani (2016), pre-eclampsia is a disease th at occurs with signs of hypertension, proteinuria, and edema that occur during both mother and fetus pregnancy. Wahyuni (2013) stated that pre-eclampsia is a disease that occurs duri ng pregnancy and can occur after gestational age of 20 weeks with symptoms such as hyper tension, edema, and proteinuria. Preeclampsia is caused by many factors and if not treated p roperly, it can lead to eclampsia and convulsions. Cunningham (2012) stated that preeclamp sia occurs with hypertension and proteinuria, or generalized edema, which is a reality cause d by pregnancy after 20 weeks gestational age.

Many babies born from mothers with preeclampsia and nonpreeclampsia are under weight Based on Table 7 above, the results show that a total of 36 (78.3%) babies born fro m mothers with preeclampsia were much higher compared to the 7 (38.9%) babies born fro m mothers without preeclampsia who were underweight. These results show that underweig ht babies are mostly born from mothers with preeclampsia. Underweight babies are babie s who are born with less than normal weight. According to Atikah Proverawati and Cahyo I smawati (2010), underweight babies are babies who are born weighing less than 2500 gram s and have not completed their gestational period. Generally, underweight babies are related to one another.

She did not have her period for two months. Usually, a baby born underweight is related to the mother's age being under 18 or over 35, premature birth or caused by malnutrition. It means that the baby is born before reaching 38 weeks of pregnancy, but the baby was born underweight at 2500 grams. According to WHO, 2011, a baby who is born underweight is the same as a baby born weighing 2500 grams or less. An underweight baby is caused by premature birth (gestational age of fewer than 37 weeks) or due to the mother's malnutrition during pregnancy. Based on the explanation above, babies born underweight like the baby who was born weighing 2500 grams need fast treatment after delivery to prevent future growth risks. There is a relationship between preeclampsia (a pregnancy complication characterized by high blood pressure and damage to organs such as the liver and kidney) and babies being born underweight. Based on table 8 above, out of 46 mothers with preeclampsia, 36 (78.3%) had babies born underweight, and 10 (21.7%) did not. Among 18 mothers without pre-eclampsia, 7 (38.9%) had babies born underweight and 11 (61.1%) did not. The chi-square statistical test result showed that the p-value (0.03) is smaller than the alpha value α (0.050), which means that pre-eclampsia and babies being born underweight have a significant relationship. Based on observations, pre-eclampsia is a significant risk for babies being born underweight. According to Matenek's observation in Rahyani, 2020, Pre-eclampsia is a disease characterized by signs such as hypertension, proteinuria, and edema that occur during pregnancy and are generally diagnosed in the third trimester. The diagnosis of pre-eclampsia is based on hypertension and proteinuria and occurs at the gestational age of 20 weeks. Pre-eclampsia is a major cause of babies born underweight.

Maternal mortality and the same cause related to underweight births occurred. Underweight births refer to babies born weighing less than 2500 grams at gestational age. According to Mitayani in 2013, complications from pre-eclampsia affecting the condition of the fetus can hinder fetal growth in the uterus and result in underweight babies, neonatal asphyxia, fetal death within the uterus, and premature babies. This issue is also based on the theory that, according to Winkjosastro in 2007, mothers who experience pre-eclampsia during pregnancy will experience placental dysfunction that can cause a disruption of blood flow to the placenta. As a result, the fetus will not receive optimal nutrition and oxygen. Invasion of trophoblastic cells can also cause placental function disturbances, primarily in the spiral arteries in the myometrium area, which cannot respond well to the fetus's nutritional and oxygen requirements, leading to fetal growth interruption in the mother with pre-eclampsia due to placental hypoperfusion. Spasms that cause interruptions in placental function can also cause abnormal fetal growth and underweight births during the gestational period. A reduced blood flow impedes the intake of nutrition, carbon dioxide (CO2), and oxygen (O2), which can result in asphyxia.

Conclusion

Based on the results of the research conducted on the relationship between Pre-ecla mpsia and the incidence of underweight babies born at the Guido Valadares National Hospi tal in the year 2023, a total of 64 people were selected for the sample and the results from th e frequency distribution of both pre-eclampsia and nonpre-eclampsia mothers were identifie d. It was found that 46 people (71.9%) had Pre-eclampsia, which is significantly higher co mpared to the 18 people (28.1%) who did not have it. 78.3% of the underweight babies wer e born from mothers with Pre-eclampsia, which is significantly higher compared to the 38.9 % born from Non-pre-eclampsia mothers. The relationship between Pre-eclampsia and the i ncidence of underweight babies born showed a p-value of 0.03. The results also showed tha t there are significantly more cases of Pre-eclampsia compared to nonpre-eclampsia. There is also a significantly higher number of underweight babies bornfrom Pre-eclampsia mother s. This research was conducted at the Obstetrics unit of the Guido Valadares National Ho spital.

BIBLIOGRÁFY

Ai, Yeyeh & Rukiyah, (2014). *Asuhan Kebidanan I*, Jakarta: Tran Info Media

Ary Setiwan, Saryono 2011. *Metodologi Penelitian Kebidanan DII, DIV, S1, S2* Yogyakarta: Nulia Medika

Atikar Proverawati dan Chyo Ismawati. *Berat Badan Lahir Rendah (BBLR).* Yogyakarat: Nuha Medika; 2010

Anik Mariyunani, Nurhayati; (2009). *Buku Asuhhan Kegawatan Darurat dan Penyulit Pada Neonatus.* Jakarta; TIM

Burden G. 3/8/2018 *Preeclampsia and Maternal Mortality*: a Global Burden.(2018;(1): 3-5.

Cunningham, F Gary. Leveno, Kenneth J., Bloom, Steven L., Haulth, John C., Rouse, Dwight J dan SPONG, Catherine Y. 2012, *Obstetri Williams* Edisi 23 Volume 2. Jakarta.

Dr Taufan Nugroho 2012, *Obsgym Obstetri Dan Ginekologi.* Yogyakarta

Duley L. (2006). *Preeclampsia, eclampsia, and hypertension. Am Fam Physician.* 2006, 79 (10): 895-896

Fauzia, Shafira.2017 hubungan tingkat pre-eklamsia dengan berat badan lahir rendah (BBRL) di RSUD,Dr.H.Abdul Meolok.

Icesmi Sukasmi Sudarti 2014,*Parologi,Kehamilan,Persalinan,Nifas Dan Neonatus Resiko Tinggi.*

Juliawan, K. D. 2017. *Hubungan Riwayat Hipertensi pada Kehamilan sebelumnnya dengan Preeklamsia pada ibu bersalin di IRS Kebidanan RSUP Sanglah Denpasar.*

Maryunani, Anik. (2016). *Kehamilan dan Persalinan Patologis (Risiko Tinggi dan Komplikasi) Dalam Kebidanan.* Jakarta: CV Trans Info Media

Mukhsin, A.,2016 Latifah, S., dan Farida N. *The Relationship Preeclampsia, Maternal Characteristic and With Low Birth Weight in* Public Hospital, Tangerang. J Bina Cendekia Kebidanan, 2016, 2(2); 206-214 13. Asesu iha http://repository.unsri.ac.id asesu iha dia 24 de Setembro 2022.

Makbruri, 2015, *Faktor Resiko yang Memengaruhi Berat Badan lahir Rendah dan Sangat Rendah* di Kecamatan Ulu Seberang II Kota Palembang Periode 1 Januari-31 Desember 2008. J Gradien, 2015, 2(1); 1079-1084. Asesu iha http://eprints.poltekkesjogja.ac.id asesu iha dia 18 de Outubro 2022.

Notoatmodjo, 2018, *Metodologi Penelitian Kesehatan*,: Jakarta: Rineka Cipta.

Notoatmodjo, 2012, *Metodologi Penelitian Kesehatan* asesu iha http://eprints.umpo.ac.id asesu iha dia 12 de Desembro 2022.

Nita Norma, Mustika Dewi, 2013, *Asuhan Kebidanan Patologik J1*. Sadewa No.1 Sarowajan baru, Yogyakarta.

Nursalam, 2013. *Metodologi Penelitian Ilmu Keperawatan pendekatan edisi 3.* Jakarta Selamba Medika

Prawirohardjo, Sarwono, 2008. *Ilmu Kebidanan*. Jakarta: Bina Pustaka, 910-911.

Rahyani.N.K.Y,dkk.(2020) *Buku Ajar Asuhan Kebidanan Patologi Bagi Bidan*. Yogyakarta: Andi.

Relatorio statistika annual, 2013, *komplikasaun inan isin rua*.

Robson, E, 2011, *Patologi pada Kehamilan: Manajemen dan Asuhan Kebidanan.* Jakarta: EGC.

Saryono, 2011 *Metodologi Penelitian Kuantitaif, Kualitatif, Keperawatan*. UPT. Percetakan dan Penerbitan UNSOED. Asesu iha http://eprints.ums.ac.id asesu iha dia 19 de Janeiro 2023.

Sugyono, 2019. *Metode Penelitian Kuantitatif, Kualitatif, dan R & D*, Penerbit, Alfabeta, Bandung

Sugyono , 2018. *Metode Penelitian Kuantitatif, Kualitatif, dan R & D*, Penerbit, Alfabeta, Bandung

Sugyono , 2017. *Metode Penelitian Kuantitatif, Kualitatif, dan R & D*, Penerbit, Alfabeta, Bandung

Timor-Leste Demographic and Health Survey (TLDHS), 2016.http://resposotiry.poltekkes-enpasar.ac.idd/7487/2.

WHO, 2015. Low Birth Weight. Asesu iha http://www.childinfo.org asesu iha dia 30 Novembro 2022.

WHO, 2013, *Buku Saku, Pelayanan Kesehatan Ibu Di Fasilitas Kesehatan Dasar Dan Rujukan.*

WHO, 2012, World Health Statistics asesu iha www.who.int asesu iha dia 18 Outubro 2022.