International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531
(Print & Online)

http://gssrr.org/index.php?journal=JournalOfBasicAndApplied

---

# Effect of Antenatal Education Model Base on Problem toward Knowledge of KEK Pregnant Women and Birth Weight

Asriati[a*], Muhammad Syafar[b], Arsunan A.A.[c], Saifuddin Sirajuddin[d]

[a]*Postgraduate Program, Medical study Program, Faculty of Medicine, Hasanuddin University*
[b]*Department of Health Promotion, Faculty of Public Health, Hasanuddin University*
[c]*Department of Epidemiology, Faculty of Public Health, Hasanuddin University*
[d]*Community Nutrition Study Program, Faculty of Public Health, Hasanuddin University*
[a]*Email: asriatiyusuf@gmail.com*

**Abstract**

The weight of the baby is born (BBL) plays an important role in infant mortality, morbidity, child growth and metabolic diseases as an adult. One of the main problems is Infant Low Birth Weight (LBW), maternal nutritional status are less susceptible to BBLR. Objective: to analyze the effect of the application of the model to the knowledge PABM LBW in pregnant women and birth weight of KEK. The study was a quasy experiment that pre-test and post-test with control group design, group treatment given health education intervention in the form of a small class using the media module with the method of Problem Based Learning (PBM), which is developing everyday problems which are risk factors to the occurrence of LBW that will be discussed is associated with health belief model (health belief Model), performed statistical tests using SPSS program, the parameter is a weight Infants born to research subjects. The study was conducted during October 2015-March 2016, using two media, namely modules PABM and book KIA, Module PABM is a mix between HBM and learning methods PBM, subject consisted of 66 pregnant women KEK, 33 an intervention group and 33 as a control group.

---

* Corresponding author.

The result is knowledge LBW increased in 90.9% (30) of pregnant women who got PABM modules, effects seen in babies who are born, birth weight infants in the intervention group 84.8% (28) ≥ 2800 grams compared to those who did not receive the intervention ( 24%). The application of the model KEK PABM in pregnant women to enhance the knowledge of LBW and birth weight. Advice: Model PABM KEK can be used in pregnant women to prevent malicious occurrence of LBW.

***Keywords:*** Models PABM; KEK pregnant women; low birth weight; BLR.

## 1. Introduction

Birth weight (BBL) plays an important role in infant mortality, morbidity, child growth and metabolic diseases as adults. Some studies show the influence of maternal behavior, social, cultural, demographic, and genetic factors on birth weight [1]. One of the main problems in the BBL is Infant Low Birth Weight (LBW). Some studies indicate the status of malnutrition in pregnant women contributes to the increased incidence of low birth weight, so if prevention programs are not done, there will be a higher increase in the incidence of low birth weight. Status measurement nutrition of pregnant women can be measured in many ways, but the first strata SMEs (puskesmas) government set measurement Upper Arm Circumference (MUAC) as an indicator of the nutritional status of pregnant women. It said the risk of KEK or malnutrition status if the measurement upper arm circumference (MUAC) <23.5cm.[2] from several supporting a research conducted in Indonesia found that MUAC <23.5 influential 42.55 times against it happened LBW [3.4].

More than 20 million babies worldwide, or 15, 5% of all births, are born with LBW, 95.6% are in developing countries. BLR level in developing countries (16.5%) two-fold higher compared to developed countries (7%). LBW in sub-Saharan Africa about 15%. Central and South America is much lower (10%), while in the Caribbean (14%) is almost as high in sub-Saharan Africa [5]. The prevalence of LBW in the world is estimated at 15% of which 38% occur in developing countries, Data of Basic Health Research in 2013 showed that the percentage of LBW nationally by 10, 2%, these data show a decline from the previous year of 11, 1%. In 2013, the proportion of LBW highest in Central Sulawesi (16, 2%) and lowest in North Sumatra (8, 2%), while in Southeast Sulawesi percentage of low birth weight by 10%, this data indicates the number of LBW Indonesia is still higher from developed countries (7%) [6].

Data Kendari City Health Department in 2013 reported there are 214 (3.3%) pregnant women with malnutrition or risk status of SEZ and until September 2014 there were 157 (2.3%) of pregnant women with poor nutrition status / risk SEZ. This may explain the increase in incidence of LBW in 2013 increased by 1.54% to 2.1% in 2014 from January to October 2014, One of the factors that determine the occurrence of low birth weight is the knowledge of pregnant women about the risk factors associated with LBW that can be prevented. According to research conducted by [6] knowledge possessed by the pregnant women about health in pregnancy can help in caring for the health of pregnant women and the unborn properly and according to the needs of the body, including in the choice of the type of food consumed during pregnancy so as to avoid the risk to resulting in adverse effects for mother and baby. Domain knowledge is very important for the formation of a person's actions, research conducted in China [7] prove a low knowledge about health during pregnancy have a higher

risk of giving birth LBW. Prevention birth LBW can be done by providing health education for pregnant mothers and provide information - health information will increase knowledge of the pregnancy so that such knowledge will lead to awareness and ultimately will cause people to behave in accordance with their knowledge, behavior change is achieved by their knowledge into a permanent behavior that will do pregnant women [8].

One method of health education is a method of groups: small, This method is in line with the Model Problem Based Learning (PBM), PBM is an innovation in learning, one of the main contents in the PBM is the formation of a problem demanding a settlement, the first step of learning activities carried out by inviting pregnant women to understand the real problems, starting from what is already known by pregnant women to a given problem [9] belief Model health (health belief Model) is a model of utilization of health services based on the fact that the problems of health characterized by a failure person or community to accept the efforts of prevention and cure of diseases organized by the provider [10]. Therefore, this study is done to prevent LBW by combining the method of problem-based learning (PBM) with HBM models in a model called the model PABM in pregnant women KEK.

## 2. Materials and Methods

The research was conducted in the city of Kendari, Southeast Sulawesi province in the period October 2015 to March 2016 in four health centers that have numbers Pregnant women SEZ many, the research design is quasy experiment, the pre-test and post-test with control group design , Treatment group was given health education intervention using PABM modules and book KIA, KIA control only uses books, PABM module created by the model PABM while MCH Handbook is a book issued by the government through the Ministry of Health of the Republic of Indonesia. Lemeshow test based on a sample size determined amount of sample is 68 people, 33 people is a treatment group and 33 control group, the study sample was obtained by purposive sampling. Samples are pregnant women diagnosed with KEK that pregnant women with less MUAC <23.3 cm of the entire population of women that exist in the city of Kendari who met the inclusion criteria of the study.

This study was conducted using small classes through media modules PABM and book KIA, questionnaires used to measure knowledge, because there is no measuring instrument is valid and reliable, the researchers conducted the development of the measuring instrument itself, the validity of the content discussed by experts and tested on subjects that have together with the characteristics of the study subjects, and when pregnant women giving birth in infants born weighing is done to measure the BBL, univariate and bivariate statistical analysis is done manually computerized using the program as needed.

## 3. Results

### *3.1 Karakteristik respondents*

respondents in the treatment group aged 21-25 yr (33.3%) as much as 26-30 yrs of age (33.3%) as the most life span, the highest rate of pregnant women from the tribe Tolaki (51.5%), more have a husband from Muna rate (39.4%) with a high school education (90.9%) and family income of 1-2 million (75.8%), while the control

group aged 21-25 yr (57.6 %) as the largest age range and ethnic Tolaki also the origin of most of the control group of pregnant women, in contrast to the treatment group that most husbands rate is derived from Tolaki (36.4%) husband education and family income that most high school (93.9% ) and 1-2 million (51.5%) Table 1 also shows the presence or absence of variation difference between control and treatment groups, chi-square test results showed that the rate of pregnant women (p = 0.466), husbands rate (p = 0.944 ), maternal age (p = 0.154), husband of education (p = 0.602) and family income between control and treatment groups had homogeneous or not different (p> 0.05).

### *3.2 Distribution frequency based on the knowledge before and after the intervention in the treatment group and the control*

**Table 1:** Distribution of knowledge of pregnant women before and after the intervention in both groups

| **Before intervention** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Intervention | | control | | Total | |
| | | n | % | n | % | n | % |
| Knowledge 1 | Less | 30 | 90.9 | 32 | 97.0 | 62 | 93.9 |
| | Enough | 3 | 9.1 | 1 | 3.0 | 4 | 6.1 |
| **After intervention** | | | | | | | |
| Knowledge 2 | Less | 0 | 0.0 | 17 | 51.5 | 17 | 25.8 |
| | Enough | 33 | 100.0 | 16 | 48.5 | 49 | 74.2 |

Table 1 shows the knowledge of pregnant women about Weight Infant Low Birth (LBW) in both groups is at a level less knowledge before the intervention, after intervention in the treatment group were in enough knowledge (100%) but the control group remained at less knowledge (51, 5%)

**Table 2:** Analyzes knowledge of pregnant women on low birth weight infants in the intervention and control groups before intervention

| Before intervention | | | | | | | | **p** |
|---|---|---|---|---|---|---|---|---|
| | | Intervention | | control | | Total | | |
| | | n | % | n | % | n | % | |
| Knowledge | Less | 30 | 90.9 | 32 | 97.0 | 62 | 93.9 | 0,613 |
| | Enough | 3 | 9.1 | 1 | 3.0 | 4 | 6.1 | |

Table 2 shows the knowledge of pregnant women about Low birth weight before the intervention in the position

less, but pregnant women in the control group more (97%) with less knowledge about Low birth weight babies than pregnant women in the treatment group (90.9%) , The value of p> 0.05 indicates that before the intervention there was no difference in knowledge of pregnant women about low birth weight between the control group and the treatment group.

### *3.2 Comparison of knowledge of pregnant women about Infant Low Birth Weight (LBW) in the treatment and control groups after intervention*

**Table 3:** Analysis of pregnant women knowledge about low birth weight infants in the intervention and control groups after intervention

| **After Intervention** | | | | | | | | **p** |
|---|---|---|---|---|---|---|---|---|
| | | Treatment | | Control | | Total | | |
| | | n | % | n | % | n | % | |
| Knowledge 2 | Less | 0 | 0.0 | 17 | 51.5 | 17 | 25.8 | 0,00 |
| | Enough | 33 | 100.0 | 16 | 48.5 | 49 | 74.2 | |

Table 3 shows the knowledge of pregnant women about birth weight after the intervention in the control group the level of knowledge about low birth weight infants is still high (51.5%) compared to the treatment group (0%), but in both groups there was an increase of knowledge. A p value <0.05 indicates there is a difference after intervention knowledge of Low Birth Weight Infants in the control group and the treatment

### *3.4 Comparison of knowledge before and after the intervention in the treatment group*

**Table 4:** A comparative analysis of knowledge before and after the intervention in the treatment group

| Knowledge 1 | Knowledge 2 | | | | p |
|---|---|---|---|---|---|
| | Less | | Enough | | |
| | n | % | n | % | |
| Less | 0 | 0 | 30 | 90,9 | 0,000 |
| Enough | 0 | 0 | 3 | 9 | |

Table 4 shows the changes Knowledge of low birth weight of less become quite after intervention occurred as many as 30 people (90.9%) of mothers understood the intervention group., P value <0.05 indicates no difference in knowledge before and after the intervention in the treatment group.

### *3.5 Analysis BBL in the control and treatment groups Based on knowledge*

**Table 5:** Weight Babies born analysis based knowledge LBW in the treatment group and the Control

| Pregnant mother status | | | BBL/gr | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2600 | 2700 | 2800 | 2900 | 3000 |
| Treatment | Knowledge 2 | Less | 2 | 3 | 12 | 13 | 3 |
| Control | Knowledge 2 | Less | 3 | 5 | 6 | 2 | 0 |

Table 5 shows the weight of babies born in the treatment group had a higher birth weight than the control group after the intervention, birth weight infants in the experimental group 84.8% (28) ≥ 2800 grams compared to the control group (24%).

## 4. Discussion

Knowledge of good nutrition will affect the selection of food was good, but the knowledge of nutrition alone cannot fully sensitize pregnant women about the importance of these substances, but the knowledge of the consequences that would happen if the pregnant woman does not meet the nutritional needs become more important , Knowledge of low birth weight (LBW) and long-term impact that occurs in babies who will be born is an important factor to be known by a pregnant mother, maternal knowledge about the LBW will be able to change the behavior of women who previously passive or indifferent toward the fulfillment of nutrients during pregnancy.

In this study, knowledge of pregnant women about weight Babies born Low given in learning through modules (Module PABM) and MCH Handbook, Module PABM is a module that uses the learning method is the method of Problem Based Learning (PBM) that contains the problem low birth weight infants who combined with the trust model health / health belief Model, the material in module suitable with HBM and learning methods appropriate steps in PBM.

This study is in line with research conducted Ekhtiari [10], in Iran found that education / teaching for self-care based on Health Belief Model (HBM), significantly reduce the risk of low birth weight in the group intervened, so that we can conclude the implementation of care education HBM yourself based on effective pregnant women to reduce the number of LBW.

## 5. Conclusion

Implementation Model KEK PABM in pregnant women through small class methods can improve the knowledge of pregnant women about LBW which has resulted in an increase in BBL

**References**

[1] Padilha P, E. Accioly, C. Chagas, E. Portela, C. L. Da Silva Y.Saunders , 2009, Birth weight variation according to maternal characteristics and gestational weight gain in Brazilian women, j. Nutr Hosp

[2] Depkes RI., 2009. Profil Kesehatan Indonesia tahun 2008, Depkes RI , Jakarta

[3] Nurhadi, 2006 Faktor Risiko Ibu Dan Layanan Antenatal Terhadap Kejadian Bayi Berat Lahir Rendah ( Studi kasus di BP RSUD Kraton Pekalongan) Program Pascasarjana Universitas Diponegoro,Semarang

[4] Komariah S. 2008, hubungan pengetahuan,sikap dan perilaku ibu hamil tentang pemeriksaan kehamilan dengan kunjungan pemeriksaan kehamilan di wilayah kerja puskesmab sukorame, mojoroto, Kediri, program studi magister kedokteran keluarga minat pendidikan tenaga kesehatan, universitas sebelas maret surakarta

[5] WHO, 2005 worldwidt prevalense of anemia 1993-2005, WHO global database of anemia

[6] Yinghui Liu, Jianmeng Liu, and Zhu Li, 2011, Association of Education and the Occurrence of Low Birthweight in Rural Southern China During the Early and Late 1990s, american journal publiic health

[7] Notoatmojo S. 2014, Pendidikan Kesehatan dan Ilmu Perilaku, Penerbit Rineka Cipta, Jakarta

[8] Notoatmojo S. 2013, promosi kesehatan, teori dan aplikasi , Penerbit Rineka Cipta, Jakarta

[9] Rusman, 2014, Model pembelajaran berbasis masalah, Model-Model pembelajaran, seri manajemen sekolah bermutu, edisi ke 2, Raja Grafindo persada, Jakarta

[10] Ekhtiari Y S, Fereshteh Majlessi and Elham Shakibazadeh Effect of a self-care Educational Program Based on the Health Belief Model on Reducing Low Birth Weight AmongPregnant Iranian Women Int J Prev Med. 2014 Jan;5(1):76-82