

# Short course regarding antenatal care and prevention of low birth weight babies: Improving knowledge and behavior of husband in urban area

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**Abstract.** Pregnancy is an important period in life, so it requires husband's role in supporting health care as well. One of the efforts which is made in improving husband's knowledge is through education. The aim of this study was to analyze the effectiveness of short course regarding antenatal care (ANC) and low birth weight (LBW) babies prevention on knowledge, attitude and behavior of husband in urban area. This study was quasi-experimental with one group pre and post-test design. Subject was 99 husbands of pregnant women in Lebdosari Community Health Center working area who's given a short course about ANC dan LBW babies prevention used "Bumil-Kit" media by Health Cadres. Knowledge, attitude, and behavior were measured before and after given intervention used a structured questionnaire and data were analyzed used Wilcoxon Signed Rank Test. The result showed that all of subjects (100%) were in productive ages. Both of knowledge and behavior of subjects were increased ( $p=0.001$ ), but not on attitude ( $p=0.065$ ) after intervention. The increased scores of knowledge and behavior of subjects were 8.16% and 5.85%, respectively. In conclusion, providing education through short course using "Bumil-Kit" media can increase knowledge and behavior regarding antenatal care and low birth weight babies prevention of husband in urban area.

**Keywords:** knowledge, behavior, antenatal care, low birth weight, husband

## 1. Introduction

Low birth weight (LBW) is a health problem related to nutrition and parenting. Newborns are categorized as LBW if the birth weight are less than 2500 g (WHO, 2010). According to the result of the Basic Health Research in 2018, total number of cases of LBW babies increased, ie from 5.7% in 2013 to 6.2% in 2018. Although the increasing of cases of LBW babies wasn't too high, the same survey in 2007 to 2018 showed consistantly increased, so we've to more considered concern about it because of the impact which will be very detrimental for the babies. LBW babies will be more at risk in growth failure compared to normal birth weight (NBW) babies. In addition, when they are adult, LBW babies will be more at risk for degenerative diseases and behavioral changes at school age (Gupta et al, 2013). A study in

Bangladesh showed that at the age of 10 months, LBW babies caused the decreasing of mental and psychomotor development than NBW babies (Tofail et al, 2012).

Prevention of babies born with LBW can be prevented through pregnancy care programs, one of which is the antenatal care (ANC) services. The frequency of utilization of ANC services of pregnant women is based on the decision of their husband as the head of the family (Carter, 2002). However, husband usually doesn't pay much attention about this because of their knowledge of the ANC services is still poor. In line with a research in Laos which was showed that the knowledge related to the frequency of ANC visits of pregnant women (Ye et al, 2010). So, based on this phenomenon, increasing knowledge about the utilization of ANC services is very important to do, one of which is through education. Therefore, the purpose of this study is to analyze the effectiveness of giving short courses through "Bumil-Kit" media to husband on knowledge, attitudes, and behavior of pregnancy care, especially regarding the utilization of ANC services and prevention of babies born with LBW.

## **2. Method**

This study was Quasi Experimental research with One Group Pre and Post Test study design. Research subjects were 99 husbands of pregnant women registered in Lebdosari Community Health Center working area. The intervention given to subjects was a short course with the "Bumil-Kit" media consisting of a weight scale, microtoise, mid upper arm circumference (MUAC) ribbon, maternal and child health books, health card for pregnant women, and booklets about the role of husband in assisting pregnancy care and prevention of babies born with LBW. Short courses were given through counseling or socializing and training on how to use the "Bumil-Kit" media. Short courses for husbands of pregnant women are given for 1 (one) day and given by health cadres in the region.

The variables were examined in this study were knowledge, attitude, and behavior of subjects regarding utilization of ANC services and prevention of LBW babies. These three variables were measured before and after the giving of intervention, and the instruments used were structured questionnaires. Data were analyzed using the Wilcoxon Signed-Rank Test with the interpretation there is a significant influence when the probability value used was less than 5% ( $p < 0.05$ ). There was no compulsion from any party towards the subjects to participate in this study. This can be proved by the willingness of the subjects to sign the informed consent form to be the subject of research. This study has also passed an ethical study with Ethical Clearance Number No: 224/EA/KEPK-FKM/2018 from the Commission of Health Research Ethics, Faculty of Public Health, Diponegoro University.

## **3. Result and Discussion**

### **3.1. Subject Characteristics**

Demographic data of the subjects reflects the background identity of the subject outside the research variables studied. In general, the subjects in this study has a moderate level of education and was included in the productive age. In addition, most of the subject families are also included in the main family type with sufficient per capita income.

**Table 1. Distribution of Age Frequency, Level of Education, Per capita Income, and Family Type**

<b>Variabel</b>	<b>n</b>	<b>%</b>
<b>Age</b>		
a. Not Productive	0	0
b. Productive	99	100
<b>Education Level</b>		
a. Low	4	4,0
b. Moderate	77	77,9
c. High	18	18,1
<b>Per Capita Income</b>		
a. Low	12	12,1
b. Moderate	87	87,9
<b>Family Type</b>		
a. Extended	7	7,1
b. Main	92	92,9

All subjects in this study belong to the productive age (100%), meaning they have a tendency to spend longer duration in the workplace than at home. In addition, the productive age also illustrates the ability of the subject to meet the financial needs of the family, including in terms of pregnancy examinations. A study in Mexico showed that the risk of fetal growth stunted or often known as intra uterine growth retardation (IUGR) and babies born with LBW are reduced by 11% and 9% when conducting routine antenatal care (ANC) visit. The results of the study also showed that the husband could play a role as a friend for his pregnant wife, this was done to take care of the mother's psychological condition in preparing for childbirth specifically related to ANC (Coria-soto et al, 1996).

The subject's level of education was included in moderate level (77.9%) higher than the subject with higher (18.1%) and low (4%) education level. The education level classification is based on the latest education levels completed by the research subject. For example a subject included in the level of moderate education means the subject has successfully completed his last education at the high school level. Husband's education level is certainly very influential on the effectiveness of nutrition education which is provided. A study in Nigeria showed that the husband's education level had a significant effect on his wife's ANC visit. A husband with a high level of education will have more awareness to support his wife to have her pregnancy examination. In addition, they will also had better understanding on the benefits of the utilization of ANC services which one of the aims is to prevent low birth weight (LBW) of the babies (Awusi et al, 2009).

Per capita income of the subjects in the study were mostly quite sufficient (87.9%) for main family type (92.9%). In this study, the calculation of income per capita is more generated from the income of the husband as head of the family. As explained earlier that a husband's ability to meet the financial needs of the family is also related to the success or failure of the husband's role in assisting the preparation of the wife's delivery, especially in prenatal care. Pregnant women mostly get information about nutrition and health through ANC visits. In ANC visit activities, pregnant women are not only examined related to the condition of the fetus and their health, but in these activities health workers will also provide education in

order to prepare for a healthy and safe delivery. If the husband's income is low, then it is most likely that pregnant women will not conduct ANC visit routinely so this has an impact on decreasing access to information about childbirth preparation and also affecting their knowledge regarding prevention of having a LBW babies.

A study in Vietnam showed that family income or per capita income significantly influenced the frequency of ANC visits of pregnant women. Families with high per capita income tend to have ANC visit 4 times or more, compared to families classified as low income per capita (Ha et al, 2015). Apart from financial matters, the type of family is also very influential on the frequency of ANC visit of pregnant women. A study in India showed that family type was one of the demographic factors that influenced the ANC visit practice. Extended family type that usually consist of more than 1 head of household in 1 house will affect the knowledge of pregnant mothers regarding ANC and the prevention of LBW babies, and will also influence the decisions regarding childbirth preparation (Gupta et al, 2015).

### **3.2. Effect of Short Course**

Short courses given to husbands include procedures for using the "Bumil-Kit" media and providing an education about pregnancy care. Through the theme of pregnancy care, subjects obtained information regarding ANC services and prevention of LBW babies. Based on the intervention given to the subject, then the subject will be measured regarding knowledge, attitudes, and behaviors related to the two things. The knowledge questionnaire consisted of several questions regarding medicine and food consumption during pregnancy, breast care, ANC definitions, sexual intercourse during pregnancy, weight gain on pregnant women, Tetanus Toxoid injections, exposure of pregnant women about cigarette smoke, frequency of antenatal visit, and iron supplement consumption for pregnant women. In addition to the those questions, in the knowledge questionnaire there are also questions about the definition and criteria for LBW, lifestyles of pregnant women which can trigger the birth of LBW babies, LBW risk factors, and the relationship between LBW and ANC.

In the attitude questionnaire, the subject will be interviewed with questions about the husband's attitude regarding the consumption of pregnant women, physical activity patterns, giving massage treatment to the wife, dietary restrictions for pregnant women, breast care, sexual intercourse, and factors causing miscarriages. In addition, in the attitude questionnaire there are also questions about pregnancy check up, weight gain of pregnant women, birth spacing, consumption of Fe tablets, psychological condition of pregnant women, exposure to cigarette smoke, food intake, and history of illness. Finally, the questionnaire related to the subject's behavior in pregnancy care for pregnant women contains the frequency of consulting pregnancy issues to health facilities, participation in pregnant mothers class activities, consumption of recommended and restricted foods by pregnant women, physical activity patterns, stimulation to the fetus, and personal hygiene. There is also a component of questions regarding anthropometric measurements, participation of the subjects in pregnancy-related counseling activities, and maintaining the psychological condition of pregnant women.

Table 2. Effects of Short Courses on ANC Care and Prevention of LBW Babies towards Knowledge, Attitude, and Behavior of the Husband of Pregnant Mothers

Variable	Mean ± SD		p <sup>a</sup>
	Pre-test	Post-test	
Knowledge	36,38±4,83	39,35±3,36	0,001*
Attitude	40,07±5,47	41,03±3,48	0,065
Behavior	39,64±8,00	41,96±2,57	0,001*

<sup>a</sup> Wilcoxon Signed Rank Test

\* Significant interventions affect all three variables ( $p < 0,05$ )

The analysis showed that the provision of a short course on utilization of ANC services and prevention of LBW babies affected the knowledge and behavior of the husband in his role as a companion to a pregnant wife and in the process of childbirth preparation ( $p < 0.05$ ). The increase in the subject's knowledge and behavior scores were 8.16% and 5.85%, respectively. The increase in the score of both variables indicates that the short course given by the health cadres to the husband of pregnant women is very useful to support the health of pregnant women. This is in line with a study in Nepal, where researchers divided the subject into 3 groups, i.e. 1) providing ANC counseling to pregnant women and husbands, 2) providing ANC counseling only to pregnant women, and 3) giving flyers about ANC to pregnant women. ANC counseling is given approximately 35 minutes per session and is given in 2 sessions. The results showed that ANC counseling given to pregnant women and husbands (as a couple) proved to increase the frequency of ANC visit and post partum check-up visits compared with 2 other interventions. These results indicate that brief counseling is effective in increasing husband's knowledge regarding his role in assisting ANC care for pregnant women (Mullany et al, 2006).

A married couple who are given socialization related to ANC care will also get the same understanding related to childbirth preparation, one of which is in making decisions regarding professional labor and place of delivery. If both have the same understanding, then the husband and wife will have the same autonomy with each other in making these decisions with the main aim is to improve maternal health (Thapa et al, 2013). Another study conducted by Carter et al showed that in Guatemala the involvement of a husband in terms of his wife's health is very large in 2 (two) aspects, i.e. 1) regarding health care during pregnancy, and 2) accompany during childbirth. The husband will get a large portion in giving advice and input as well as making decisions regarding care during pregnancy. However, the phenomenon in Guatemala showed that the involvement of a husband in accompanying his wife's childbirth also depended on the availability of time and access to health facilities so that it is still a conceptually complex (Carter, 2002).

Another result in this study is that providing a short course to the husband has succeeded in increasing the husband's behavior score related to the ANC and prevention of LBW babies. This is in line with a study in Turkey that education about ANC in pregnant women proved to significantly influence their behavior related to the method of delivery, fetal care, and the baby to be born (Turan et al, 2003). During pregnancy, the role of the husband is needed by pregnant women. Not only in the process of pregnancy care, but the goal is more to prevent babies born with LBW. A study in Ethiopia showed that the less optimal role of the husband during the accompaniment of the pregnancy process was very influential on the risk of LBW babies (Wachamo et al, 2019). A husband who has a good level of education and knowledge regarding ANC will always support his wife to ANC visits. As previously known, during

ANC visits, pregnant women will be examined and monitored their fetal health, so the risk of giving birth to LBW babies will decrease (Ahmed et al, 2012).

In contrast to the research, a study in India showed that socio-demographic aspects including husband's knowledge did not significantly influence the incidence of LBW babies. The study states that the birth of a baby with LBW can be more effectively addressed through a direct intervention approach in pregnant women (Gogoi N, 2018). Although the focus of the intervention is more emphasized on pregnant women, but the results of a study in Ethiopia states that the thing that is more emphasized is more on ANC care, including the regulation regarding the pattern and type of food that is adequate and nutrient dense as one of the efforts to prevent the risk of LBW babies (Demelash et al, 2015).

#### **4. Conclusion**

Baby born with LBW is a sign of poor care during the pregnancy period, including ANC examination. Therefore, a husband whose status is a companion for a pregnant woman must have an optimal role during his wife's pregnancy period. Increasing knowledge about utilization of ANC services and prevention of LBW babies through the "Bumil-Kit" media proved to be significantly influential in improving knowledge and behavior of the husband of pregnant mothers in the of Lebdosari Community Health Center, Semarang City.

#### **5. Conflict of Interest**

There was no *conflict of interest* in this study.

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