Effect of Empowerment of Cadres by Using Module for Changes in Nutritional Behavior in Pregnant Women in Dlingo, Bantul, Indonesia

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ABSTRACT

The infant mortality rate in Indonesia is currently high. One of the causes is baby born with low birth weight (LBW). Prevalence of LBW in Sub-district Dlingo, District Bantul increase in three years (2013-2015) so it takes innovation to overcome them. Efforts to handle health problems are not only the responsibility of the government, but also the community. Indonesia organizes Posyandu, a community health effort in the implementation of health development, to empower the community and provide convenience to the public in obtaining basic health services to accelerate the reduction of MMR and IMR. The role of cadres in the implementation of Posyandu is very large because in addition to providing health information to the community as well as a community mobilizer to come to Posyandu, including in nutritional behavior. Unfortunately, nowadays cadres provide education to the community without a structured module so that variants of educational content, breadth of material, and tools are very varied. This study aims to determine the effect of empowerment of cadres with the use of modules for changes in nutritional behavior in pregnant women in Dlingo, Bantul. The design of this study was a post-test with control group design. The study was conducted at 2 posyandu in Sub-district Dlingo, involving 10 health cadres. Total sample of 70 pregnant women consisted of 35 intervention groups and 35 control groups with purposive sampling technique. The intervention group was the group given the nutrition education in pregnant women using curriculum according to the module made by the researcher, while the control group was using leaflet and casual consultation (as usual, if needed). Data of pregnant women were obtained from primary data (research questionnaire) and secondary data (KIA book and medical record) in December 2016 until January 2017. Data analysis paired t-test and unpaired t-test. The results showed that there was an increase in knowledge, attitude, and behavior before and after treatment. There was a significant average difference between intervention groups dan control groups before and after intervention ($p$-value = 0,000 <0,05) in knowledge ($p$-value = 0,000, CI.95% 1,77- 1,04-2,5) attitude ($p$-value = 0,000, CI.95% 9,2-14,8), and behavior ($p$-value = 0,000, CI.95% 8,65-13,6). The conclusion in this research is empowerment of cadre using module have a significant effect to increase knowledge, attitude and behavior of pregnant woman nutrition.

Keyword: Empowerment of cadres, Pregnant mother, Nutritional behaviour

I. BACKGROUND

Infant mortality rate (IMR) is one of indicators that show society health level. In 2013, IMR in Indonesia was 24,5 per 1000 live births. The cause was acute respiratory infection 16%, preterm birth 19%, intrapartum complication 11%, neonatorum sepsis 6%, congenital disorders 11% and other diseases 16%.[1]. More than 20 million babies in the world 15,5% of all births) are born with Low Birt Weight (LBW), a condition of newborn with birth weight less than 2.500 gram³. The highest IMR in developing countries is 96% in which 16,5% were born with LBW and 6% of them were death[2].

The data from Ministry of Health (2015) stated that LBW case in Special Region of Yogyakarta was 9%³, and Bantul district gave contribution of 3,62%. From seventeen sub-districts in Bantul, Dlingo sub-district had the highest percentage of LBW case and there was an increasing number of LBW case in the last three years, those are 5.5% in 2013, 8.3% in 2014 and 8.65% in 2015.

Pregnant women nutrition is one of causes of LBW[5]. The effort to prevent births with LBW is more important than facing birth with LBW by conducting good antenatal care, giving consultation or referral if there is abnormality, and conducting pre-conception care about nutrition for pregnancy preparation³[6]. Pregnant woman is one of groups that are prone to nutrition deficiency because there is an increase of nutritional need to fulfill mother and fetus needs[7]. If a woman suffers from under nutrition during pregnancy, it will lead to some risks and complications such as Chronic Energy Deficiency (CED), anemia, bleeding, abnormal mothers’ weight gain, infectious diseases, difficult and prolonged delivery; for fetus it can influence fetus growth, miscarriage, abortion, died at birth, neonatal
Prevalence of CED in pregnant women in Yogyakarta in 2015 was 22.6%. Supplemental Food Recovery Program for pregnant women with CED only able to fix normal nutritional status by 13%. This is because there are other factors that influence nutritional status in pregnant women with CED, those are eating pattern, food consumption, economical status, health status, job, and mothers’ knowledge.

Knowledge has an important role in someone’s life especially daily activities including health behavior. Knowledge is the result of ‘know’ and it occurs after someone is sensing certain object. Knowledge or cognitive is a very important domain in forming someone’s action (overt behavior). Knowledge on good nutrition is expected to be in line with good attitude and behavior in nutrition fulfillment.

One of government’s efforts in accelerating the decrease of mothers and infant mortality rate is through Posyandu. Posyandu is one form of health efforts that is managed and conducted from, by and for society in health development management.

The efforts to increase role and function of Posyandu are not only government responsibility, but also society responsibility. The role of cadres in Posyandu management is very big because other than as a health information provider for society, they also encourage the society to come to Posyandu and perform clean and healthy lifestyle including good nutritional behavior.

Due to the role of cadres who play a big role on the community, it is very necessary to prepare the cadres so that it can be a health workers extension in promoting and maintaining the quality of health as well as recognize the problem early on. There are at least 4 health cadre tasks there are monthly measuring child weigh, nutrition and health counseling; nutrition packing; immunization and paralytic monitoring; and identification of diseases, provide simple health care and referrals.

In preparing the cadres, a person is chosen by the community and is willing to spend time trained using curriculum and training module for Posyandu Cadres. The materials obtained are how to manage posyandu, posyandu cadre task, assess health problem at posyandu target, community mobilization, posyandu activity and its development, counseling, and reporting/ recording. The subject of nutrition is one of the subjects in the main duty of posyandu cadres. But the module has not discussed in detail the material on nutritional fulfillment in pregnant women, so there is considerable variation in providing the material.

A preliminary study conducted at Puskesmas Dlingo on six women with a history of LBW showed that CED and anemia were caused by malnutrition status. The number of midwives at Dlingo Public Health Center is only six midwives for the population (19,352 people), which means one midwife per 3,225 people. This is far from the ideal midwife ratio target in 2011-2025 (100 midwives per 100,000 population). Mothers who visited posyandu were given knowledge on nutrition, some of which were passed (not awarded). Knowledge of nutrition is given in questions and answers by cadres. Counseling is usually performed by midwives from puskesmas (community health center).

The number of midwifery that does not meet the target yet, the high number of LBW cases in Dlingo, and cadres’ abilities in transferring knowledge about nutrition make the researcher interested in stop the LBW cases chain by empowering cadres in changing healthy nutritional behavior using structured modules so that it can be used as a reference in giving counseling to pregnant women.

This study aims to determine the effect of empowerment of cadres with the use of modules for changes in nutritional behavior in pregnant women in Dlingo, Bantul.

II METHODS

The design was Quasy Experiment Design, used pretest-posttest with control group design. This research was conducted at Posyandu Purnama, Dlingo on November 20, 2016 until January 20, 2017. The population in this study was all pregnant women in Dlingo (149 pregnant women). Research subjects consisted of intervention groups (ie groups of pregnant women given nutritional education by cadre according to curriculum in module made by the researcher) and control group (ie group of pregnant women given nutrition education by cadre using common method, giving leaflet and consultation / Questions answered if deemed necessary). Each group each taken 35 subjects of pregnant women, so the overall number of samples was 70 respondents. Sampling technique using purposive sampling. Inclusion criteria was literacy, willing to be a research respondent. Exclusion criteria were the mothers who have health education background.

The independent variable in this research is the use of module by cadre in providing nutrition education; Dependent variable that is knowledge, attitude and behavior; And characteristic variables such as age, education, occupation and information. The data scale of the independent variable is nominal, the dependent
variable is the nominal and the interval and the characteristic variables are nominal and ordinal. Data collection was done by using secondary data derived from medical record and MCH book, and primary data was taken by questionnaires filled by respondents at the time of pretest and posttest. Pretest was done on the first day before the intervention was given and posttest was done in the next month (during repeat visit of posyandu in next month).

Data processing techniques are done by editing, coding, entry and tabulating. The analysis of this research data is univariable and bivariable analysis, questionnaire test using product moment for validity test and reliability test using Alfa Cronbach with minimum alpha value 0.7, homogeneity test with levene's test, normality test with Kolmogorov-Smirnov and hypothesis test with paired t-test and unpaired t-test. Data analysis used SPSS 16.0 at 95% confidence level.

III RESULT

A. Univariable Analysis

<table>
<thead>
<tr>
<th>Group</th>
<th>Catagories</th>
<th>Intervention n</th>
<th>Control n</th>
<th>Total n</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Not At Risk</td>
<td>24</td>
<td>25</td>
<td>49</td>
<td>0.596</td>
</tr>
<tr>
<td></td>
<td>At Risk</td>
<td>11</td>
<td>10</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Higher</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>12</td>
<td>13</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basic</td>
<td>20</td>
<td>19</td>
<td>39</td>
<td>0.307</td>
</tr>
<tr>
<td>Occupation</td>
<td>Housewife</td>
<td>18</td>
<td>21</td>
<td>39</td>
<td>0.307</td>
</tr>
<tr>
<td></td>
<td>Employee</td>
<td>17</td>
<td>14</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>work at Formal</td>
<td>18</td>
<td>21</td>
<td>39</td>
<td>0.307</td>
</tr>
<tr>
<td></td>
<td>institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>Ever</td>
<td>19</td>
<td>21</td>
<td>40</td>
<td>0.356</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>16</td>
<td>14</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 1. shows no significant difference of respondent characteristic between intervention and control group. It is shown with p-value of each characteristic > 0.05. That means both groups have the similar characteristics of subject or homogeneous groups.

B. Bivariable Analysis

Table 2. Analysis of Paired t-test for Knowledge, Attitudes and Behavior of Intervention Group

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>p-value</th>
<th>Mean Diff (CI. 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre knowledge</td>
<td>35</td>
<td>9,3</td>
<td>-1,73</td>
<td>-14,40</td>
<td>-0,06 (-1,06)</td>
</tr>
<tr>
<td>Post knowledge</td>
<td>35</td>
<td>1,928</td>
<td>0,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre attitude</td>
<td>35</td>
<td>39,6</td>
<td>-11,70</td>
<td>-14,5</td>
<td>-4,06 (-8,9)</td>
</tr>
<tr>
<td>Post attitude</td>
<td>35</td>
<td>8,006</td>
<td>0,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre behaviour</td>
<td>35</td>
<td>53,5</td>
<td>-10,8</td>
<td>-16,2</td>
<td>-2,8 (-8,4)</td>
</tr>
<tr>
<td>Post behaviour</td>
<td>35</td>
<td>64,3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is a significant difference in the mean of knowledge, attitude and behavior (pre and post intervention) in the form of nutritional education by cadre by using module in intervention group.

Table 3. Analysis of Paired t-test for Knowledge, Attitudes and Behavior of Control Group

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>p-value</th>
<th>Mean Diff (CI. 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre knowledge</td>
<td>35</td>
<td>9,29</td>
<td>0,03</td>
<td>-2,74</td>
<td>0,33</td>
</tr>
<tr>
<td>Post knowledge</td>
<td>35</td>
<td>8,7</td>
<td>0,845</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre attitude</td>
<td>35</td>
<td>46,50</td>
<td>0,29</td>
<td>-1</td>
<td>0,68</td>
</tr>
<tr>
<td>Post attitude</td>
<td>35</td>
<td>46,21</td>
<td>0,68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre behaviour</td>
<td>35</td>
<td>60,68</td>
<td>0,32</td>
<td>-0,45</td>
<td>1,1</td>
</tr>
<tr>
<td>Post behaviour</td>
<td>35</td>
<td>60,35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on statistical results using unpaired t-test obtained p-value = 0,000 <0.05 and the confidence
interval did not pass zero. Statistically there is a significant difference of mean level of knowledge, attitude and behavior in the intervention and control group.

IV. DISCUSSION

The results of this study indicate that the majority of pregnant women in this study were in the age range between 20-35 years. Physiologically, this age range is the best time period for women to get pregnant (not at risk) [12].

The highest level of education of respondents were basic level. Data on employment indicate that the majority of respondents were not working at formal institution (housewife), and also the majority of them have been informed about balanced nutrition during pregnancy. The woman who do not work at formal institution allow respondents to have more free or flexible time to get information about balanced nutrition during pregnancy from various media. However, not all respondents who do not work at formal institution have spare time to get information. This may be because respondents tend to take care of household. In addition, this depends on the respondent's desire to obtain the information [13].

The study also found that there was an increase in knowledge, attitudes and behavior of pregnant women in both groups. However, the increase in the intervention group was greater than that of the control group. The learning module is the smallest unit of teaching and learning, learned by individual learners (self-instructional) [14]. The module also allows the cadres to complete mastery up to 75% so that the cadres further improve their ability in transfer knowledge, provide motivation, and evaluate the success of nutritional education given to pregnant women [23].

It is possible that the information provided by the cadres in the intervention group is more effective than information obtained through leaflets or casual counseling. This is in accordance with the theory that interpersonal communication is the most effective form of communication because communicators and communicators can directly face to face, so that the stimulus of messages or information conveyed by a direct communicant can be responded on the spot. In case of unclear messages or information received by the communicant, then at that time can also be clarified.

The significant increase of knowledge, attitudes and behaviors in the intervention group is consistent with the theory that the application of health education in the intervention group uses the socratic (two-way) method so that the participants are more active and creative [15]. This is in line with research conducted by Sumarah (2007) that two-way method is more effective in increasing knowledge 4.19 higher than with leaflet [16]. Bloom shares behaviors in three domains: knowledge, attitude and practice or action. Knowledge is the result of 'knowing', and this occurs after people have sensed a particular object. Knowledge or cognition is a very important domain for overt behavior, and behavior based on knowledge will be more lasting than behavior that is not based on knowledge [16]. Attitudes are determined by the individual's beliefs about outcomes for behavior (behavioral beliefs). Thus, a person who holds a strong positive belief is judged to have a positive attitude toward behavior. Conversely, a person who holds a strong negative belief of behavior will have a negative attitude toward behavior [17]. An attitude has not been automatically manifested in an action (overt behavior). To realize the attitude of being a real action required supporting factors or a condition that allows, such as facilities. In addition to facilities factor, also needed support factors from other parties, such as from husband, parents or parent in-laws and others [10].

Pregnant women with good nutritional knowledge are expected to choose good and balanced nutritional intake for themselves, the fetus and the family. Good nutrition knowledge can help a person learn how to store, process and use quality food for consumption.

The results of this study in accordance with research conducted Nurhayati (2011) on health education to improve knowledge, attitude and behavior towards smoking. The analysis results show that p-value = 0.000 (95% CI 1.92-3.26) means that there is better knowledge and behavior to quit smoking after health education [18]. In addition to research conducted by Nurhayati, the results of this study are also in line with the results of Yabanci et al (2014) study that maternal nutrition education effectively improves nutritional knowledge in mothers, and mothers with higher knowledge positively affect the behavior and habits in mothers and his children [19].

Providing leaflets to the control group can influence the knowledge, attitudes and behavior of pregnant women but the increase is not significant, so it can be concluded that the information provided by Posyandu cadres using modules more effective in improving knowledge, attitude and behavior of pregnant women against a stimulus. Although the knowledge of the respondents in the control group is good, but attitude and behavior are still negative. In order to assist individuals, groups, or communities in changing their behavior, it is necessary to understand the factors that influence the ongoing and changing behavior [20]. Things that affect a person's behavior can come from internal factors and external factors [2]. This is in line with the results of a
study conducted by Susanti (2014) that there is a difference of average pre and post test results on the knowledge and attitude of the mother of children under five in nutrition at Posyandu Tambak Rejo after empowering cadres with p-value value 0.000 <0.05 [21]. Community empowerment, especially Posyandu cadres, is an effort to empower the community through the realization of their potential capabilities. In addition, empowerment of Posyandu cadres can lead to a willingness that is a tendency to perform an action or attitude to improve public health in a community [22].

V. CONCLUSION

Based on the results of this study, it can be concluded that empowerment of cadre by using module have a significant effect to increase knowledge, attitude and behavior of pregnant woman nutrition.

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