

Effect of Training to Knowledge and Practices of Dasa Wisma Activists as Pregnant Women Assistants in Preventing Low Birth Weight

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Abstract

The number of Low Birth Weight (LBW) in Indonesia is still high because of, among others, the lack of mothers' knowledge to prevent LBW case. The solution proposed is to encourage *Dasa Wisma (Dawis)* activists to assist pregnant women as one of the strategic actions. The aim of the research was to analyze the effect of assistance training towards the knowledge and practices of *Dawis* activists related to the prevention of LBW case in pregnant women. Method of this research was pretest and posttest without control group design of Quasi-experimental were applied. The population sampled using purposive random sampling was 37 *Dawis* activists in Tlogosari Wetan District, Semarang. The distance between pretest and posttest was approximately one month. Test result of Wilcoxon Match Paired test revealed that there were significant differences in the knowledge ($p < 0.05$) and practices ($p < 0.05$) of *Dawis* Activists before and after the intervention of assistance training. In the end of this research, the knowledge of *Dawis* Activists increased 5.97 points, while their practices increased 3.97 points. The recommendation from this research is that assistance training for *Dawis* Activists is necessary, even if it is only for a day, in order to increase the competence of *Dawis* Activists in assisting pregnant women to prevent Low Birth Weight case in one month.

Keywords: Training, Knowledge, Dasa Wiswa Assistance, Pregnant Woman, Birth Weight.

Introduction

The number of Low Birth Weight (LBW) case in Indonesia is still high. LBW has been considered the primary factors in the increasing number of mortality and morbidity of neonatal, infants, and children, which may lead to long-term effects in the future¹. In Indonesia, the high rate of malnutrition cases in pregnant women contributed to that of LBW case, which was estimated to be more than 350.000 infants per annum, and it has been predicted that 17 million LBW babies per annum might also be exposed to. Meanwhile, in Central Java, the percentage of LBW tended to be increasing since

2012 to 2015, and it decreased in 2016². According to the report of the Health Office of Semarang City in 2016, there were 506 infants (1.9%) of LBW infants in 2016, consisted of 260 male infants and 249 female infants³. One of the districts identified to be low nutrition infants and toddlers was Tlogosari Wetan District. Realizing the possible danger of LBW, several strategies have been implemented to reduce LBW cases, yet, the results have not been maximum. Meanwhile, the government has not prioritized community empowerment programs.

Cadres, the closest persons to the community and pregnant women, have been empowered to be able to assist pregnant women for the last few years. In addition to the cadres, some people may voluntarily assist pregnant women, such as the *Dasa Wisma (Dawis)* activists. Until recently, *Dawis* activists have not joined such training regarding their function to assist pregnant women within their area. The assistance of *Dawis* activists to pregnant

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women is one of the strategic moves that significantly leverage in solving LBW problems. The general purpose of this research was to analyze the changing paradigm from PLC to CLC with evidence-based proof that the *Dawis* activists could be educated with the prevention of LBW through assistance training, in order to raise their confidence and possess sufficient knowledge as pregnant women assistant.

Method

This was quasi-experimental research, with pre and posttest without control group design. The population of this research was the *Dawis* Activists in the working area of PHC Tlogosari Wetan, Semarang City, especially in Kecamatan Tlogosari Wetan. The sampling method has been done through purposive random sampling to 37 *Dawis* Activists.

Intervention in this research was through a training for a whole day, led by an expert in Mothers and Child Health from the Faculty of Public Health Diponegoro University, as a provision for the *Dawis* Activists to assist pregnant women related to LBW prevention. Data about the knowledge and practices was obtained from

a structured interview by trained enumerators. Data analysis used Wilcoxon Match Paired test (data obtained distributed abnormally) to analyze the difference or alteration in the result in the knowledge and practices of the *Dawis* Activists before and after intervention.

Results and Discussions

According to distribution table from the *Dawis* Activists, all 37 participants in this research were females (100%) with following composition: 75% of participants were above 35 year old including four 50 year old participants. Most of them has been joining *Dawis* for 10 years or less (84%), which the biggest population were 5 years and 10 years' experience as *Dawis* members (5 people in each population). The latest education was mostly Senior High School or equal (56%) with following professions: 54% housewives, 54% private sector workers as tailors, entrepreneurs, and company workers.

The Knowledge of *Dawis* Activists: The table 1 showed the increase and decrease number of participants who understand the knowledge related to maternal and child health.

Table. 1 The difference of participants' knowledge before and after intervention

No.	Statement	Before intervention				After intervention			
		Understand		Unversed		Understand		Unversed	
		n	%	n	%	n	%	n	%
1	Pregnancy development	26	70.3	11	29.7	37	100	0	0.0
2	Signs of pregnancy	34	91.4	3	8.1	36	97.3	1	2.7
3	Blood pressure check during pregnancy	32	86.5	5	13.5	34	91.9	3	8.1
4	TT immunization during pregnancy	22	59.5	15	40.5	32	86.5	5	13.5
5	Iron tablets for pregnant women	29	78.4	8	21.6	33	89.2	4	10.8
6	Pregnant women and fetus health	23	62.2	14	37.8	32	86.5	5	13.5
7	Pregnancy gymnastics	27	73.0	10	27.0	37	100.0	0	0.0
8	Pregnant women nutrition	37	100.0	0	0.0	37	100.0	0	0.0
9	Alarming signs during pregnancy	8	21.6	29	78.4	14	37.8	23	62.2
10	Contact health provider when the alarming signs appear during pregnancy	36	97.3	1	2.7	34	91.9	3	8.1
11	Regular Pregnancy check	9	24.3	28	75.7	29	78.4	8	21.6
12	Carbonated drinks	25	67.7	12	32.4	37	100.0	0	0.0
13	Counselling during pregnancy	23	62.2	14	37.8	35	94.6	2	5.4
14	Resting period for pregnant women	26	70.3	11	29.7	36	97.3	1	2.7
15	Pregnant women medicines	36	97.3	1	2.7	37	100.0	0	0.0

Table. 2 The score difference of participants' knowledge

Participants knowledge related to LBW prevention	Before intervention		After intervention	
	N	%	N	%
Give 75% or less right answers	27	73.0	1	2.7
Give more than 75% right answers	10	27.0	36	97.3
Total score	37	100.0	37	100.0
Mean	10.62		13.51	
Wilcoxon test	p= 0.001 (p < 0.05)			

This study showed that intervention through the *Dawis* Activists as an action to prevent obstetric outcomes of LWB, then after the *Dawis* Activists implemented pregnant women assistance, it showed a significant result. Difference test used Wilcoxon test showed significant difference of knowledge during before and after intervention (p=0.001). The result of normality test showed irregular distribution pretest variables (p=0.020) and irregular distribution posttest variables (p=0.002), thus Wilcoxon test was selected. From the results of difference test using Wilcoxon test, it showed a significant difference of knowledge in before and after intervention (p=0.001).

This result was in accordance with the previous study in Australia, which shows that 70% - 97% participants achieve an increasing rate of confidence through training and 83% - 91% participants achieve an increasing rate of knowledge in mothers and children health topic from pre-training score 11 to post-training score 15⁴.

Another literature shows that output targets from the training in health program counselor communication techniques, it increases the confidence of participants who have limitations in delivering health information^{5,6}. The keys of success in health training are delivering health education with confidence, good communication techniques, giving positive stigma, and educate people naturally for counselors⁷.

These results corresponded with the result of a research in rural India, which shows that anemia maternal incident during 3 – 5 months of gestation period significantly related to the high LBW tendency (OR: 0.34, 95% CI: 0.13-0.92, p=0.03). Approximately 30% of participants experience unplanned pregnancy, thus, it raises the risk of LBW. Therefore, pregnant women need to be provided with nutrition plan education and healthy lifestyle during their pregnancy⁸.

Another important subject that should be informed by the *Dawis* Activists to pregnant women was the restriction on consuming medicines. Bocca, et al, stated on the research that Extremely LBW with < 1500 grams birth weight happened because of drugs exposure, which then caused element deficiency or toxicity that affected fetus development, obstructed the absorption of uteroplacental nutrition circulation, and increased oxidative stress⁹.

The Practice of *Dawis* Activists in PHC Tlogosari Wetan Working Area: The following table showed the increasing and decreasing number of participants who implemented pregnant women assistance practices.

Table. 3 Practice Differences of the Participants before and after intervention

No	Statement	Before intervention				After intervention			
		Do		Don't		Do		Don't	
		n	%	N	%	n	%	n	%
1	Pregnancy Test	36	97.3	1	2.7	33	89.2	4	10.8
2	Pregnancy Signs	29	78.4	8	21.6	31	83.8	6	16.2
3	Pregnancy check in health facility	22	59.5	15	40.5	35	94.6	2	5.4
4	Pregnant women carry heavy load	23	62.2	14	37.8	36	97.3	1	2.7
5	Resting and small activities for pregnant women	23	62.2	14	37.8	33	89.2	4	10.8
6	No dietary food during pregnancy	24	64.9	13	37.1	30	81.1	7	18.9
7	Pregnancy gymnastic	25	67.6	12	32.4	32	86.5	5	33.5
8	Nutrition for pregnant women	15	40.5	22	59.5	27	73.0	10	27.0
9	Alarming signs during pregnancy	26	70.3	11	29.7	31	83.8	6	16.2
10	Avoidable LBW	29	78.4	8	21.6	32	86.5	5	13.5
11	Pregnant women must avoid cigarette smokes	22	59.5	15	40.5	32	86.5	5	13.5
12	Fruits and vegetables are important for pregnant women	26	70.3	11	29.7	30	81.1	7	18.9

No	Statement	Before intervention				After intervention			
		Do		Don't		Do		Don't	
		n	%	N	%	n	%	n	%
13	Pregnant women should not do heavy works	24	64.9	13	35.1	35	94.6	2	5.4
14	Pregnant women drink water or milk	30	81.1	7	18.9	33	89.2	4	10.8
15	Sports for pregnant women	26	70.3	11	29.7	32	86.5	5	13.5

Table.4 The score difference of participants' practices

Participants practices related to LBW prevention	Before intervention		After intervention	
	N	%	N	%
Give 75% or less right answers	30	81.1	9	24.3
Give more than 75% right answer	7	18.9	28	75.7
Total score	37	100.0	37	100.0
Mean	9.70		13.02	
Wilcoxon test	p= 0.001 (p < 0.05)			

The result of normality test showed irregular distribution pretest variables (p=0.001) and irregular distribution posttest variables (p=0.001), thus Wilcoxon test was selected. From the results of difference test using Wilcoxon test, it showed a significant difference of practice in before and after intervention (p=0.001). This study showed that there was a significant practices change in before and after intervention as the result of comparative test used Wilcoxon test (p=0.001).

The material conveyed by the *Dawis* Activists stated that pregnant women must avoid cigarette smokes is in line with the literature which stated that smoking causes toxicity trace element that could disrupt uteroplacental circulation and increase oxidative stress⁹. In another literature, it shows that cigarette smokes exposure during pregnancy would increase the risk of LBW and premature birth¹⁰⁻¹³, and inducing labor in 37 – 38 weeks gestation¹⁴.

This research also in accordance with following literatures, that LBW case prevention could be implemented through prenatal care program evaluation, pregnant women mapping, assistance, education, and elevate the knowledge about mother and children health¹⁵. Implementation of the *Dawis* Activists assistance to pregnant women through education and motivation is flexibly conducted based on the activities of the *Dawis* Activists and pregnant women, including home visit. This could be optimized according to the research from Krans, et al. in the United States, which

states that optimum prenatal check for LBW prevention through education and home visit which is the fittest model for pregnant women because of its flexibility¹⁶.

Home visitation in New York according to Lee, et al. is conducted as pregnant women service strategy, including in the case of teenage pregnancy which has limited social and family support¹⁷⁻¹⁹. Furthermore, home visit program becomes the core program that has a significant impact to decrease the risk of pregnancy complication, including LBW²⁰.

Conclusions

The result of this study shows that there are differences in the knowledge of the *Dawis* Activists before and after intervention regarding the training on LBW prevention in pregnancy with p=0.001 and the average increasing point is 3.11 point. There are also differences in the practices of the *Dawis* Activists before and after intervention regarding the training on LBW prevention in pregnancy with p=0.001 and the average increasing point is 3.32 point.

The role of the *Dawis* Activists is also crucial to convey information and to monitor public health level by monitoring pregnant women health. Also, PHC needs to assign more active programs and activities to the *Dawis* Activists under its working area to provide monitoring and information regarding health issues, especially for pregnant women.

Conflict of Interest: The authors declare that they have no conflict of interest within this research.

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