

The Effectiveness of Low Birth Weight (LBW) Infant Care Training and Improvement of Health Cadre Skills in Caring for LBW Infant

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Abstract: Health cadres hold great potential in supporting families with LBW infant. Their main roles include educating and motivating families to do Kangaroo Method Care (KMC) and exclusive breastfeeding for LBW infant. This quantitative study used a quasi-experimental method without a control group to see the effectiveness of LBW infant care training on 109 cadres from 5 sub-districts in East Jakarta, Indonesia. The measured variables are knowledge, practice and attitudes of the health cadres before the training compared to after completing the training. The Paired T Test is used as a statistical tool to see the discrepancy of the variables after the intervention. The study indicates cadres' knowledge ($p = 0.00$), practice ($p = 0.00$) and attitude ($p = 0.00$) improvement after training. The cadres' knowledge score increased to 1,450 (14.30%), meanwhile the practice variable score increased to 2,486 (15.45%), and attitudes variable score increased 1,450 (14.30%). This study revealed that LBW infants care training and capacity building improve cadres' knowledge, practice, and attitude (up to 14,30%, 14,30 %, and 15,45%). Based on this finding, health cadres are expected to give more contribution to the local community to reduce morbidity and mortality of LBW infants by monitoring and educating families who have LBW infants.

Keywords: LBW infant care, cadre, kangaroo method care

1. Introduction

Low birth weight (LBW) infant is still an eminent public health problem since it has been proven that it contributes to short-term and long-term consequences of infant health problems. LBW infant birth rates are especially high in developing countries and so are likely to be associated with poverty. In 2019, UNICEF reported 28% of general births in South Asia are LBW neonates, 13% in Sub-Saharan Africa and 9% in Latin America (UNICEF-WHO, 2019). Making South Asia the region with the highest number of LBW births whilst Sub-Saharan Africa, though having smaller numbers, the region with the highest number of premature babies. Meanwhile in Indonesia, cited from Basic Health Research in 2013, LBW infant birth rate was up to 10.2%. The number was slightly decreased compared to the 2007 rate which was up to 11.5% thus indicating improvement (Basic Health Research, 2019).

Hospital discharge of LBW neonate signifies the improvement of their survival rate. However, the transition from hospital to home requires comprehensive preparation since it will directly affect the survival rate of LBW neonates (Gupta, Pursley and Smith, 2019). Continuous care at home is an essential factor in improving health service qualities, especially for vulnerable patients, such as low birth weight neonates (Jefferies et al., 2014). The American Academy of Pediatrics (AAP) recommends undertaking continuous care at home or primary health care center (Committee on Fetus and Newborn, 2008). According to some studies, to implement family-based health one needs health education programs starting from the hospital to returning home (Jefferies et al., 2014). Other studies have also shown that education and health assistance for parents in the community are essential and have a great impact in increasing infant survival, which is characterized by a decrease in the incidence of morbidity and mortality (Lassi Z, Kumar R, 2016).

In Indonesia, health services at the community level are mostly supported by a large number of health cadres. Health cadres have a significant role as part of the support system to improve overall community health especially for infant survival possibilities (Amelia et al., 2021). Health interventions from the community and clinics have been proven to prevent 41-72% of newborn deaths according to a study in which almost half of the interventions are community-based by involving health volunteers (Lassi Z, Kumar R, 2016). Yam et al., in 2010 reported that the

continuity of health services can be done through home-based interventions, intensive health education and counseling, multidisciplinary health services and follow-up care by telephone. Research conducted by Suriah in Garut Regency found that health cadres' role as communicators in neonatal care can increase the knowledge and attitudes of mothers in carrying out neonatal care (Suriah, 2011).

The continuity of LBW care is strongly impacted by the family role as a support system. Essential care for LBW includes the implementation of Kangaroo Method Care (KMC), Exclusive Breastfeeding, Hand Washing with Soap, Newborn Baby Hygiene Care, and Immunization (Ministry of Health, 2010). Community health center nurses and health cadres have a crucial role in providing assistance and support for LBW mothers and their families so they could practice LBW care properly. Health cadres have been heavily involved in health services for infants and toddlers in the community through posyandu, yet there is inadequate research report that focuses on the role of health cadres in LBW cares. Cadres have limited knowledge about LBW care, where in such a manner they cannot be involved in monitoring families who have LBW in their area. This study aims to see the effect of LBW care training which will be provided to health cadres in the East Jakarta area in 2021.

2. Methods

Study desain

The research was conducted from July to October 2021 using a quasi-experimental without control group included. The questionnaire used for the pre and posttest was developed by the researcher and tested before being used.

Sample

The sampling method used in this study is Purposive Sampling. The population in this study were cadres from 30 villages in 5 sub-districts in East Jakarta, namely Ciracas, Cipayung, Pasar Rebo, Makassar, and Kramatjati. The research sample was cadres with the following criteria: (1) actively carrying out their duties as cadres in the past year, (2) at least graduated from junior high school, and (3) willing to be involved not only in monitoring and mentoring mothers who have LBW at least once a week but also monitoring the condition of the baby. The total number of the chosen cadres are 109 people. Consent was obtained from all cadres using consent forms attached to the questionnaires before conducting the activity.

Intervention

Respondents were given intervention in the form of LBW infant Care Facilitator Training. The skills taught at training are as follows; the implementation of Kangaroo Method Care, Exclusive Breastfeeding, Hand Washing with Soap, and Newborn Hygiene Care. The methods used in the training include lectures, interactive discussions, demonstrations and role playing. The training was carried out via online and offline in accordance with local government policies regarding COVID-19 health protocols. After completing the training, cadres were assisted by research team in providing education and support to the mother with LBW infants in their neighborhood.

Measures

Pretest measurement was completed before the training while the posttest measurement on the after. Before data collection, written informed consent was obtained from all cadres.

Analysis

Paired t-test was conducted to evaluate changes in cadres in terms of knowledge, practice and attitude of caring for LBW infants before and after the training intervention. Data processing was carried out using SPSS version 22 software meanwhile the bivariate test was carried out using Paired t-test.

This research has passed the ethical review with a certificate number. KEPK-PKJ3/061/VIII/2021.

3. Results and Discussions

The research subjects of this study are 109 health cadres. Most of the cadres are 50 years old (65%), with primary education level (57.8%), not working (59.6%) and the majority of them have served as health cadres for more than 5 years (57.8%) (Table 1)

Table 5.1. Description of Health Cadre Characteristics, Year 2021

Variable	Total(n=109)	Percentage (%)
Age		
< 45 years old	44	40
≥ 45 years old	65	59
Educational Status		
Basic (Elementary School)	41	37.6
Intermediate (Junior and High school)	63	57.8
High (Higher Education)	5	4.6
Length of time being a cadre		
< 2 years	23	21.1
2-5 years	23	21.1
≥ 5 years	63	57.8
Employment Status		
Unemployment	65	59.6
Employee	44	40.4

The distribution of knowledge, attitudes and practices of health cadres towards LBW infant care is depicted in Table 2. The mean score of knowledge about LBW infant care before the training intervention was 10.14 (SD: 1.803) and it increased after the training to 11.59 (SD: 1.916). The average score of LBW infant care practice before the training intervention was 6.73 (SD: 1.798) and after the training it increased to 7.77 (SD: 1.495). The average score of attitudes towards LBW care before the training intervention was 39 (SD: 4,116) and after training was 39 (SD: 4,116) and after training increased to 41.49 (SD: 4,008).

Table 2. Distribution of Knowledge, Practices and Attitudes of Cadres on LBW Infant Care

Variable	Test	Mean/Median	SD	Min-Max
Knowledge about LBW Infant Care	Pretest	10.14	1.803	6-13
	Posttest	11.59	1.910	6-14
LBW Infant Care Nursing Practice	Pretest	6.73	1.798	3-10
	Posttest	7.77	1.495	4-10
Attitude towards LBW infant Care	Pretest	39.00	4.166	33-49
	Posttest	41.49	4.008	35-52

The results of the pre test and post test statistics on Knowledge of LBW Care using Paired T (Table 3). Test obtained p value = 0.0001 for knowledge, practices and attitudes related to LBW infant care. The results of the pretest and posttest statistical tests on the knowledge of cadres on LBW infant care with a value of p = 0.00 (p<0.05) meaning that there was a significant progress of health cadres after the training intervention, with the average difference up to 1,450. The training is proven to be effective in increasing knowledge by 14.30%.

Table 3. The Effects of LBW Infant Care Training on Health Cadres, Year 2021

Variables	Mean ± SD			P value	
	Before Intervention	Training	After Training Intervention		
Knowledge Intervention	10.14±1,803		11.59±1.916	1.450	0.00
Intervention Effect: Pre-Post	14.30%				
Practice	6.73±1.798		7.77±1.405	1.073	0.00

Intervention Effect: Pre-Post	15.45%			
Attitude	39.00±4.166	41.49±4.008	2,486	0.00
Intervention Effect: Pre-Post	6.38%			

A significant progress could be seen in the practice of LBW infant treatment with an average score difference of 2,486 which indicated that there was an intervention effect of 15.45%. On the value of cadres' attitudes towards LBW care, there was a significant difference in scores with an average score difference of 1,450 and gave an intervention effect .

The differences in value between the measurements before the training intervention and the final measurement proves that LBW care training in the form of education and assistance has a significant impact on increasing knowledge, practice and attitudes of health cadres to study LBW infant care.

Ariff et al., 2010, reported in their research that training is needed to increase knowledge of cadres and is carried out periodically to develop cadres' abilities in counseling and public health services, especially regarding maternal and neonatal health. Similar training was conducted in Gadchiroli, India through the implementation of the Home Based Neonatal Care Model. In this study health cadres are involved in detecting and providing basic care for premature and low birth weight babies. Cadres are given training to conduct monitoring and assistance for neonatal and detect the presence of premature babies or LBW in their area. Within 10 years of applying this model, there was a decrease in the incidence of LBW births and neonatal morbidity (sepsis, birth asphyxia, hypothermia and drinking problems) (Bang, Bang and Reddy, 2005).

Research involving cadres in LBW care was also conducted in Swahili, Tanzania in 2008-2009. The intervention is in the form of home-based counseling, with the slogan "Protect Your Newborn". designed in consultation with the Ministry of Health, WHO, UNICEF, and professional organizations. The key counseling messages conveyed to mothers and families who have babies are behavioral changes, such as hygiene during delivery, early and exclusive breastfeeding, and LBW care, including Kangaroo Method Care (Chan et al., 2016).

Based on several community-based neonatal care models, in this study, health cadres who have been involved in MCH and nutrition program activities in their area can also be involved in finding LBW cases, both those born in the community and returning from the hospital while they are still alive. are in the working area. Monitoring of pregnant women and giving birth in their area (monitoring of pregnant women and childbirth has been ongoing) can be developed by tracking babies born to identify the possibility of LBW.

Health cadres are extensions of the puskesmas in the community in carrying out the puskesmas program. Minister of Home Affairs Regulation No.19 of 2011, concerning Guidelines for the Integration of Basic Social Services in Integrated Service Posts states that Integrated Service Posts and community health cadres are organized so that the community can obtain basic health services to accelerate the reduction of maternal and infant mortality.

The limitation of this study is that the pandemic situation causes the measurement of LBW care practices to be carried out online. Some cadres have difficulty in practicing properly, especially the redemo- ration of the Kangaroo Method of Care (KMC), which is a new thing for health cadres. The provision of videos on how to do KMC is one solution to overcome the problem of the limitations of direct KMC practice.

4. Conclusion

Most of the selected health cadres participating in the LBW Infant Care training are 45 years old women with primary education level, unemployment and has served as cadres for more than 5 years. There was a significant increase in the knowledge, practices and attitudes of health cadres after the training compared to the before training score results. The increase in the mean score for knowledge about LBW infant care before and after the training intervention was 1,450 (14.30%), LBW infant care practice was 2,486 (15.45%), and attitude towards LBW infant care was 1,450 (14.30%). Based on the goals set, the training has the effect of increasing knowledge, practice and attitudes of health cadres towards LBW infant care.

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Conflict of interest statement

None declared.

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