



IMPLEMENTATION OF VITAMIN A SUPPLEMENTATION FOR POSTPARTUM MOTHER IN PALU CITY AND SIGI REGENCY

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Abstract

World Health Organization (WHO) recommends high-dose vitamin A supplementation during postpartum period, particularly in countries with Vitamin A deficiency. Indonesian government have implemented Vitamin A supplementation in the form of red capsules of vitamin A 200,000 IU for postpartum mothers (Permenkes RI Number 21 of 2015). This study aims to find out the implementation of Vitamin A supplementation for postpartum mothers in Palu City and Sigi Regency. This study is a quantitative descriptive study with cross sectional design. This study was conducted in coverage area of Palu City and Sigi Regency health office from August 2nd to September 15th 2017. The study population was limited to postpartum mothers with total of 384 subjects. Samples were selected by multistage proportional sampling technique. Study results showed that the respondents were in age group of 20-35 years old (80.7%), general high school education level (50%), and working as housewife (81.0%). Implementation of Vitamin A supplementation for postpartum mother in Palu City and Sigi Regency was 33.3%. Education had a correlation to vitamin A administration for postpartum mother ($p = 0.015$). Out of the 130 respondents, 76.2% consumed Vitamin A immediately after delivery, and 12.3% consumed it 6 hours postpartum. The number of Vitamin A consumed completely was 64.6%. The method to consume Vitamin A was generally correct (85.1%), namely 1 capsule in first day and 1 capsule in the next day. Midwife is the most important professional in the Vitamin A administration for postpartum mothers (95.4%). This study suggests that the health department of Palu City and Sigi Regency improve the Vitamin A administration for postpartum mother in Palu City and Sigi Regency. The Health Polytechnic of Health Ministry in Palu needs to socialize this study results in the courses relevant to postnatal care in Midwifery Department or other departments.

Keywords: Vitamin A, Postpartum Mothers

Introduction

World Health Organization (WHO) recommends high-dose Vitamin A supplementation during postpartum period, particularly in countries with Vitamin A deficiency [1].

To reduce the morbidity and mortality risks in infants with Vitamin A deficiency, Indonesia government have implemented Vitamin A administration in the form of blue Vitamin A capsule 100,000 IU for 6 to 11 months old infants and red Vitamin A capsule 200,000 IU for 12 to 59 months old infants and postpartum mothers [2].

One of the important nutrients that plays a role in reducing morbidity and mortality is Vitamin A. Vitamin A deficiency can lead to decreased immunity function which in turn favor the morbidity and mortality from various infectious diseases such as diarrhea, lower respiratory tract infection, and measles. Vitamin A plays role in producing immune response through increased T cell and retinol immune response that affect the growth and differentiation of B lymphocyte [3].

Although the strategies to supplement during postpartum period have been implemented in several countries, there are remain concerns about the most effective



doses. Investigations warn that 200.000 IU seems not adequate in improving Vitamin A at subclinical level in mothers and their infants during the first six months of life (Rice, 1999). Since 2002, International Vitamin A Consultative Group (IVACG) have recommended high dose Vitamin A supplementation 400,000 IU during infertility period [4].

In order to satisfy the Vitamin A need for postpartum mothers, since 1996 Indonesia government have implemented the administration of high dose vitamin A capsules 200,000 IU for postpartum mother, one capsule is administered immediately after delivery and other capsule in the next day to not more than 6 weeks.

The reason to supplement postpartum mothers with high dose vitamin A is that the supplementation, like substantial supplementation, ensures adequate vitamin supply for the mothers and provides adequate vitamin A for the infants through breastfeeding [5].

A study in Serang, Indonesia, have investigated 116 postpartum mothers divided into two groups. Group 1 are postpartum mothers receiving 2 vitamin A capsules with each capsule was consumed in two consecutive days, whereas Group 2 are postpartum mothers receiving 2 capsules and consumed immediately at once. The study findings indicated that at day 30, the retinol level in breastfeed have nearly reached the baseline level. Thirty days after Vitamin A administration the retinol level in the breastfeed in group receiving 2 x 1 capsules was higher compared to group receiving 2 capsules at once. This study suggested that 1 of the 2 capsules of Vitamin A is administered at day 3-7 after the first vitamin A capsule administration to maintain higher vitamin A in breastfeed for a longer time. But it should be kept in mind that the first Vitamin capsule needs to be administered immediately before 1 week after delivery [6].

Hafid.F & Taqwin suggested that vitamin A in less than two years old infants prevents morbidity and stunting in children [7]. Given the important role played by the Vitamin A administration, we intend to know the implementation of Vitamin A administration for postpartum mother in Palu City and Sigi Regency through Research on Health Professionals Development of Health Polytechnic of Palu Health Ministry Palu, 2017.

Material ad Method

This study was a quantitative descriptive study with cross sectional design. The study was conducted in the coverage area of health office of Palu City and Sigi Regency from August 2nd to September 15th 2017. The population was limited to postpartum mothers with total 384 subjects. Samples were selected by multistage proportional sampling technique. Data were obtained by questionnaire interview and analyzed using SPSS 17.0 software with univariate data analysis using frequency distribution and bivariate using Chi-square.

Results

Implementation of Vitamin A administration for postpartum mothers in Palu City and Sigi Regency was signified in the data obtained during study:

Table 1 Distribution of respondents by regency and subdistrict

Area	n	%
Palu City		80,7
North Palu	101	26,3
East Palu	27	7,0
West Palu	23	6,0
South Palu	50	13,0
Mantikulare	109	28,4
Sigi		19,3
Biromaru	24	6,3
Dolo	50	13,0
Total	384	100



Table 2 Characteristics of Respondents

Characteristics	n	%
Age		
< 20 years	23	6,0
20-35 years	310	80,7
>35 years	51	13,3
Education		
Elementary School (ES)	38	9,9
Junior High School (JHS)	77	20,1
Senior High School (SHS)	192	50,0
Higher Education (HE)	77	20,1
Profession		
Farmer	1	0,3
Trader	8	2,1
Daily Labour	1	0,3
Civil Servant	32	8,3
Private Employee	13	3,4
Housewife	311	81,0
Honorary	16	4,2
Bank Employee	2	0,5
Vitamin A status		
Receiving	130	33,9
Not Receiving	254	66,1

Table 3 Distribution of Number, Administering Personnel, Time, and Way to Consume Vitamin A

Number of Vitamin A	N	%
One	43	33,1
Two	87	66,9
Personnel		
Midwife	124	95,4
Nutrition Personnel	2	1,5
Doctor	4	3,1
Consumption Time		
Immediately after Delivery	99	76,2
6 Hours after delivery	16	12,3
1 day after delivery	12	9,2
2 days after delivery	1	0,8
3 days after delivery	2	1,5
Consumption Method		
1 Capsule Only	46	35,4
2 Capsules at once	10	7,7
1 Capsule every first day and 1 capsule next day	74	56,9

Table 4 Relationship between Respondent Education and Vitamin A Consumption

Education	Postpartum Vitamin A Consumption				Total	p-value
	Yes		No			
	n	%	n	%		
ES	6	15,8	32	84,2	38	0,015
JHS	20	26,0	57	74,0	77	
SHS	75	39,1	117	60,9	192	
HE	29	37,7	48	62,3	77	
Total	130	33,9	254	66,1	384	

* $p \leq 0.05$

Table 5 Relationship between Vitamin A Consumption Number and Consumption Method

Number of Vitamin A	Postpartum Vitamin A Consumption				1 capsule in first day and 1 capsule next day		p-value
	1 Capsule only		2 Capsules at once				
	n	%	n	%			
One Capsule	41	95,3	2	4,7	0	0	0,000
Two Capsules	5	5,7	8	9,2	74	85,1	
Total	46	35,4	10	7,7	74	56,9	

* $p \leq 0.05$



Discussion

This study on the implementation of Vitamin A administration for postpartum mothers in Palu City and Sigi Regency was conducted from August 2nd to September 20th 2017. This study involved 11 enumerators collecting data of 384 respondents distributed in 7 coverage areas of health centers. Generally, respondents were in age group of 20-35 years old (80.7%), had senior high school education level (50%), and only 9.9% had elementary school education level, working as housewife (81.0%), civil servant (8.3%). Respondents' husbands were working in private sector (37.0%) and as civil servant (12.5%).

Study results indicated that from 384 respondents, implementation of Vitamin A administration for postpartum mothers in Palu City and Sigi Regency was 33.3%. Implementation of Vitamin A administration in the studied area was still lower compared to Sandjaja & Ridwan (2012) study that use secondary data of Riskesdas 2010, where the coverage of vitamin A capsule supplementation in mothers was averagely 56.1 percent and varied by provinces. The coverage between urban areas was 61.4% [8].

The factor that had significant effect in the administration of vitamin A for postpartum mothers was education. Cross tabulation between respondents education and vitamin A consumption indicated a trend that the higher the education level, the higher the vitamin A intake for postpartum mother (p value = 0.015). In accordance with this study, Sandjaja & Ridwan (2012) also observed that the factors that had significant influence on vitamin A coverage in postpartum mothers were neonatal care provision, receiving blood booster tablet, AC, TT immunization, completing elementary school level, but age and marital status did not influence the coverage [8].

According to Permeke RI Number 21 of 2015, the Program of Vitamin A Administration in Indonesia for Postpartum Mothers is the administration of Red Capsule (200,000 SI) for twice after delivery. Characteristics of vitamin A administration in study areas indicated that from 130 respondents, those who consumed vitamin A immediately after delivery was 76.2%, 6 hours after delivery was 12.3%, 1 day after delivery 9.2%, 2 days after delivery 0.8%, and 3 days after delivery 1.5%. Respondents who consumed Vitamin A completely was 84 f 130 (64.6%). Cross tabulation between consumed vitamin A and its consumption method indicated that the chosen method was generally correct (85.1%), namely 1 capsule in the first day and 1 capsule in the next day, for respondents consuming 2 capsules of vitamin A during postpartum period.

This study was in accordance with the study by Permaesih & Rosmalina (2008) that suggested the administration of one of the two vitamin A capsules at day 3-7 after the administration of first vitamin A capsule, in order to maintain the vitamin A level in breastfeed at higher level for longer time. However, it should be kept in mind that the first vitamin A capsule need to be administered immediately before 1 week after delivery [2].

Health professional with the most important role in vitamin A administration for postpartum mother was midwife (95.4%), given that midwife is the main delivery helper in study area. These results are similar to study by Dewi, Hakimi & Suhadi (2010) that suggest that midwife role in rural areas have a significant correlation to coverage area of vitamin A administration in postpartum mothers [9]. Lessons learned from the study in Sleman on 47 rural midwives regarding factors related to vitamin A capsule administration for postpartum mother by rural midwives. The studied factors included guided working, resources, supervision,



communication, implementer attitude, and environmental support. The study results supported the midwife as the implementer of vitamin A supplementation program (74.5%) with very significant influence in supporting the program implementation followed by supervision by stakeholder (63.8%), guidance from the program (61.7%), communication between program managers (61.7%), attitude in program implementation (53.2%), and resources (51.1%). Respondents considered the implementation of vitamin A supplementation program for postpartum mothers was good [10].

Despite the relatively low coverage (only 33.9%), the number of mothers that consumed cooking oil that have been fortified with vitamin A was fairly good (78.4%). This is very helpful because the vitamin A consumption from the government program is low. Rosmalina et. al. (2009) showed that breastfeeding mothers were divided into 4 treatment groups randomly. Group 1 received 2 vitamin A capsules and vitamin A-fortified cooking oil, Group 2 received 2 Vitamin A capsules and cooking oil without fortification, Group 3 received placebo and cooking oil fortified with vitamin A, Group 4 received placebo and cooking oil without fortification. Study results indicated that the vitamin A-fortified cooking oil affected the body vitamin A reserve of postpartum mother. Serum retinol level and body vitamin A reserve of breastfeeding mothers in the end of the study was significantly different between treatment group and control group. Administration of cooking oil fortified with vitamin A 25 ppm, either to breastfeeding mothers receiving high dose capsule supplementation or those without supplementation can increase serum retinol level significantly. Body vitamin A reserve in breastfeeding mother increased in group consuming vitamin A-fortified cooking oil either receiving high dose vitamin A capsule or not.

Conclusion

Implementation of Vitamin A administration for postpartum mother in Palu City and Sigi Regency was 33%. This study suggest that the Health Office of Palu and Sigi increase the administration of Vitamin A for postpartum mothers. The Health Polytechnic of Health Ministry in Palu needs to socialize this study results in the courses relevant to postnatal care in Midwifery Department or other departments.

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