
The Influence of Knowledge, Social Support, Nutritional Intake on the Nutritional Status of Postpartum Mothers and Their Babies, Who Practice Se'i Culture in Kupang District, Indonesia

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ABSTRACT

Se'i is one of the cultural practices in Timor, Indonesia. It is a practice where postpartum mothers are required to stay inside round house, smoked, and not allowed to eat eggs, meats, fish and vegetables for 40 days. This study aimed to identify the influence of knowledge, social support and nutritional intake on the nutritional status of postpartum mothers and their babies, who practice Se'i. This quantitative inquiry used cross sectional design and involved 31 participants. Chi square test was employed to explore the relationship between independent and dependent variables, and paired test was used to identify the differences between the first and second measurement of body weight and arm circumference of mothers and babies. The results indicated that the relationship between knowledge, social support from families and nutritional status of postpartum mothers and their babies was statistically insignificant. The relationship between nutritional intake and nutritional status of postpartum mothers and their babies was statistically significant. The results of paired test indicated that there were meaningful differences of body weight and arm circumference of the mothers and their babies between the first and second measurement. The findings indicate the needs for improvement of food intake during Se'i cultural practice which could have positive impacts on the health status of postpartum mothers and their babies

Keywords: Knowledge, social support, nutritional intake, nutritional status, postpartum mothers, babies, Kupang, Indonesia

INTRODUCTION

Maternal and child health has been a major public health problem in Indonesia. This is reflected in the increased number of maternal and child deaths in the country (1). Low nutritional intake has been reported to be one of the main contributing factors for maternal and child health problems as it leads to low nutritional status of mothers and their babies and low body weight of babies (2). Data on nutritional status of babies in Indonesia during the last few years show that

there were 18.4 percent of babies in the country had low nutritional status in 2007, 17.9 percent in 2010 and 19.6 percent in 2013 (3).

Cultural practices have also been incriminated as one of the factors that have significant influence on the health of mothers and their babies during pregnancy and after birth (4, 5). Se'i practice is one of the cultural practices in Timor believed to influence the health or nutritional status of postpartum mothers and their babies. Se'i is smoking tradition for postpartum mothers and their babies who are expected to get typical timorese nursing known as *oe'maputu-ai malala*. *Oe'maputu-ai malala* means hot (warm) water and live coals. Hot water is used to shower postpartum mothers and live coals are put under the bed of the mothers and their babies to bloat them. Postpartum mothers (and their babies) who practice Se'i are required to stay inside or not allowed to go outside *Ume 'Khubu* (Round House) for 40 days. *Ume 'Khubu* has round wall and cone shape roof, and the length of the roof almost touches the ground. Its wall is made of wood or bamboo and the roof is made of leaves of weeds which are wooven to form sheets (6). This house has one door and no windows, which influece air sirculation and prohibit sunlight into the house.

The mothers are not allowed to eat eggs, meats, fish and vegetables during performing the Se'i culture for 40 days. Porridge is the only food they are allowed to eat, hence nutritional intake is insufficient, leading to decreasing body weight, body immune, nutritional status and production of breast milk (7, 8). These indicate that eating pattern of postpartum mothers has significant influence on the nutritional status of both the mothers and their babies. Eating pattern of postpartum mothers who perform Se'i in Timor is entirely arraged by other family members. Therefore, social support of family members has strong influence on the health and nutrotional status of both postpartum mothers and their babies. Strong social support of other family members would have positive impacts on their nutritional intake and nutritional status, and vice versa (9).

The number of births in Kupang regency in 2014 was 6,237, of which 128 mothers died after giving birth (10). Meanwhile, the number of reported postpartum mothers in West Kupang Sub-district where the current study was conducted was 357 people, of whom 90 percent were predicted to have practiced Se'i for 40 days (11, 12). High number of maternal deaths in Kupang regency is believed to have relation with low nutritional intake during practicing Se'i after giving birth. Therefore, the aim of this study was to identify the influence of knowedge, social support, nutritional intake on nutritional status of postpartum mothers and their babies, who practice Se'i.

METHODS

A quantitative inquire using cross sectional design was conducted in the area of Batakte community health centre, West Kupang Sub-district , Kupang District, in 2017 (13). The

respondents of this study were postpartum mothers who practiced Se'i culture as a traditional nursing for postpartum mothers. The respondents were recruited through two steps including (i) deciding on the cluster of the study which was 12 villages of West Kupang Sub-district; (ii) Random unit sample using lottery in the 12 villages. At the end, 31 respondents participated in this study. Instruments used in this study were questionnaires, weight scales, lilac ribbon, and meter ribbon to measure body length. Independent variables were nutritional intake, knowledge, and social support from family members, and dependent variable was the nutritional status of postpartum mothers and their babies, and between variable is Se'i culture. Chi-Square Test was used in bivariate analysis to know the relationship between variables, Paired Correlation Test was utilized to see the correlation between measurement I and II, and Paired t Test was employed to see the difference between measurement I and II (13, 14).

RESULTS

Socio-demographic Profile of Respondents

The age of the study participants was at the range of 15 to 40 years old and the majority of them were at the group age of 26 to 35 years old. Most of them graduated from Elementary School (38.7%) and Junior High School (38.7%), and a few graduated from Senior High School (16.1%) and University (6.5%). The majority of them were housewives and did not have paid job (96.8%). The majority of their husbands worked as farmers (74.2%), with the average monthly income of 610,483 rupiahs.

Knowledge, Social Support and Nutritional Status of Postpartum Mothers

The results of this study present that the majority of the study participants had good knowledge on nutritional level required to support their nutritional status (77.4%) and good social support from family members (58.0%) (see Table 1). However, only 19.4% of them had good nutritional status.

Table 1: Knowledge and social support

No	Quality	Knowledge		Social Support	
		Frequency	%	Frequency	%
1	Good	24	77.4	18	58.1
2	Sufficient	5	16.1	9	29.0
3	Insufficient	2	6.5	4	12.9
	Total	31	100	31	100

Nutritional status of the study participants varied as indicated in table 2. Six participants (19.4%) had low nutritional status, two (6.5%) were overweight and nine (29.0%) were obese.

Table 2: Nutritional status of the participants

No		Nutritional Status	
		Frequency	%
1	Low	6	19.3
2	Normal	14	45.2
3	Overweight	2	6.5
4	Obese	9	29.0

The Relationship between Knowledge and Nutritional Status of Postpartum Mothers

The results of the statistical analysis using *chi square test* indicate that the relationship between knowledge and nutritional status of postpartum mothers was statistically insignificant because P value = 0.180 (P > 0.05) (see Table 3).

Table 3: Relationship between knowledge and nutritional status

No	Knowle dge	Nutritional Status								Total		p
		Insuf ficien t	%	Nor mal	%	>Bod y weigh t	%	Obese	%			
1	Insuffic ient	0	0	1	3.2	1	3.2	0	0	2	6.5	0.18
2	Sufficie nt	2	6.5	2	6.5	0	0	1	3.2	5	16.1	
3	Good	4	12.9	11	35.5	1	3.2	8	25.8	24	77.4	
	Total	6	19.4	14	45.2	2	6.5	9	29.0	31	100	

The Relationship between Social Support from Family Members and Nutritional Status of Postpartum Mothers

The results of *Chi square test* show that the relationship between social support from family members and nutritional status of postpartum mothers was statistically insignificant, with P Value = 0.434 ($P > 0.05$) (see Table 4).

Table 4: The relationship between social support and nutritional status

No	Social Supports from Family	Nutritional Status								Total		p
		Insuf ficien t	%	Nor mal	%	>Body Weight	%	Ob ese	%	Σ	%	
1	Insufficie nt	0	0	4	12.9	0	0	0	0	4	12.9	0.434
2	Sufficient	2	6.5	3	9.7	1	3.2	3	9.7	9	29.0	

3	Good	4	12.9	7	22.6	1	3.2	6	19.4	18	58.1	
	Total	6	19.4	14	45.2	2	6.5	9	29.0	31	100	

The Relationship between Nutritional Intake and Nutritional Status of Postpartum Mothers

The results of the statistical analysis indicate that the relationship between nutritional intake and nutritional status of postpartum mothers was statistically insignificant, with P Value = 0.000 ($p < 0.05$) (see Table 5).

Table 5: The relationship between nutritional intake and nutritional status

No	Nutritional Intake	Nutritional Status								Total		p
		Insufficient	%	Normal	%	>Body Weight	%	Obese	%	Σ	%	
1	Insufficient	6	19.4	13	41.9	0	0	9	29.0	28	90.3	0.000
2	Sufficient	0	0	1	3.2	2	6.5	0	0	3	9.7	
	Total	6	19.4	14	45.2	2	6.5	9	29.0	31	100	

The Relationship between Energy Intake and Nutritional Status of Postpartum Mothers and their Babies

The statistical analysis' results show that the relationship between energy intake and nutritional status of postpartum mothers and their babies was statistically significant, with P Value = 0.001 ($P < 0.05$).

Table 6: The relationship between energy intake and nutritional status

No	Energy Intake	Energy Status								Total		p
		Insufficient	%	Normal	%	>Body Weight	%	Obese	%	Σ	%	
1	Insufficient	6	19.4	14	45.2	0	0	6	19.4	26	83.9	0.001
2	Sufficient	0	0	0	0	2	6.5	3	9.7	5	16.1	
3	Good	0	0	0	0	0	0	0	0	0	0	
	Total	6	19.4	14	45.2	2	6.5	9	29.0	31	100	

Differences in Mothers’ Body Weight and Arm Circumference between the First and Second Measurement

The results of the statistical test using *paired correlation test* (PCT) show that the correlation value = 0.000 (< 0.005), which means there was significant relationship between body weight of postpartum mothers before and after practicing Se’i (see Table 7). Similarly, PST Value = 0.114 (> 0.05), indicating significant relationship between body weight of postpartum mothers before and after practicing Se’I (see Table 7). Besides, the results of PCT showed that the correlation value = 0.000 (< 0.005), indicating a significant relationship between mothers’ arm circumference before and after practicing Se’I, meanwhile PST Value = 0.420 (> 0.05) (see Table 8), which means there was no significant difference between mothers’ circumference before and after practicing Se’i. This shows that the size of mothers’ arm circumference decreased after Se’i.

Table 7: Mothers’ body weight at first and second measurement

No	Mothers’ Body Weight	Mean	N	SD	P Paired SC	P Paired ST
1	Measurement I	52.42	31	8.19	0,000	0,114
2	Measurement II	50.97	31	9.36		
	Difference	1.45				

Table 8: Mothers’ arm circumference at first and second measurement

No	Mothers’ Arm Circumference	Mean	N	SD	P Paired SC	P Paired ST
1	Measurement I	25.31	31	2.59	0.000	0.420
2	Measurement II	25.14	31	2.57		
	Difference	0.17				

Differences in Babies’ Body Weight and Upper Arm Circumference between the First and Second Measurement

The results of PCT present that the correlation value = 0.000 (< 0.005), indicating significant relationship between babies’ body weight before and after practicing Se’i. Similarly, PST value = 0.000 (< 0.05), indicating significant relationship between babies’ body weight before and after practicing Se’i. This means babies’ body weight increased after Se’i. The results of *paired test* show that correlation value = 0.000 (< 0.005), indicating significant relationship between babies’ upper arm circumference before and after practicing Se’i. While PST Value = 0.015 (> 0.05), showing that there was no significant difference between babies’ upper arm circumference before and after practicing Se’i. This means the size of babies’ upper arm circumference increased after Se’i practice.

Table 9: Babies’ body weight at the first and second measurement

No	Babies’ Body Weight	Mean	N	SD	P Paired SC	P Paired ST
1	Measurement I	3017	31	388.98	0.000	0.000
2	Measurement II	3590	31	722.77		
	Different	573				

Table 10: Babies’ upper arm circumference at first and second measurement

No	Babies’ Upper Arm Circumference	Mean	N	SD	P Paired SC	P Paired ST
1	Measurement I	9.99	31	1.04	0.000	0.015
2	Measurement II	10.34	31	1.19		

DISCUSSION

The current study aimed to explore the relationship between knowledge, social support from family members, nutritional intake, and nutritional status of postpartum mothers and their babies. Inconsistent with the results of a previous study (15), the current study’s findings suggest that the majority of the study participants (77.4%) had high level of knowledge on nutritional level needed by postpartum mothers and their babies. This was due to their regular engagement in antenatal care sessions delivered by the staff nearby community health centres, through which they were informed about maternal and child health and nutritional intake needed by postpartum mothers and their babies. This supports the findings of previous studies (16, 17), reporting that being exposed to health related information increases the level of knowledge of mothers even though they had low level of education. However, the results of chi square test show the relationship between knowledge of nutrition level needed and the nutritional status of postpartum mothers involved in the present study was statistically insignificant. The result confirms the

claim that level knowledge does not always lead to actual behaviour (18). Knowledge of the level of nutrition level required by postpartum mothers did not lead to sufficient nutritional intake which could improve their nutritional status (18). This might be due to the fact that during practicing the Se'i culture for 40 days they just ate porridge and were not allowed to consume eggs, fish, meats and vegetables. This is in line with previous findings reported elsewhere (19) that beliefs and dietary restrictions can lead to low level of nutritional intake and nutritional status of mothers.

Social support from family members is another important supporting factor for maternal and child health because family is a system that provides help for family members experiencing health problems (9, 20). Social support from family has positive effects on the health of family members who are sick (18). However, there are several factors influencing social support from family such as education, emotion, spirituality, economy and culture (18). The findings of the current study report that postpartum mothers had good social support from their family members. However, the results of *chi square* test show that P Value = 0.434 ($P > 0.05$), reporting that there was not meaningful relationship between social support and nutritional status of postpartum mothers. This indicates that social support from family members did not influence nutritional status of postpartum mothers practicing Se'i.

Food intake should supply sufficient nutrition for mothers and babies during breastfeeding period (8). Insufficient calorie intake could reduce the production of breast milk. Mothers need 300 to 500 extra calories everyday to breastfeed their babies (8, 14). Low calorie intake among postpartum mothers can lead to tiredness and low body weight of babies and low size of upper arm circumference after practicing Se'I (2, 8). The results of the current study suggest that most of the postpartum mothers involved in the study had low energy intake (67.7%). The statistical analysis shows that the relationship between energy intake and nutritional status of postpartum mothers was statistically significant, with P Value = 0.000 ($P < 0.05$). The results of this study provide information on nutritional intake including energy, protein, vitamin and mineral, frequency, types of foods and dietary restrictions and food processing needed by postpartum mothers. Food Frequency Questionnaires (FFQ) reports that energy supply for postpartum mothers is from rice, corn, yam, bananas, and nuts (21). This study reports that the study participants had low energy intake due to dietary restrictions from Se'i culture. They were only allowed to eat porridge and plain rice and sometimes vegetables during practicing Se'i. This was due to family beliefs that postpartum mothers need to eat soft food (porridge) to fasten their recovery after the delivery. However, porridge or plain rice has low energy content (22). Another belief leading to dietary restriction was that eating other types of foods will make breast milk rancid which discourages babies to breastfeed. This is in line with the findings of previous

studies (18, 23), indicating that socio-cultural beliefs influence people's health behaviour and are associated with diseases, health, age, pregnancy, delivery, breastfeed and other social and emotional needs. The results of this study also show that the majority of postpartum mothers had low protein intake (83.9%). The statistical test reports significant relationship between protein intake and nutritional status of postpartum mothers, with P Value = 0.001 ($p < 0.05$). Protein is needed by postpartum mothers to fasten recovery process and produce breast milk for their babies.

The findings of the current study also suggest that the average difference of mothers' body weight between the first and second measurement was 1.45 and the relationship between mothers' body weight before and after practicing Se'i was statistically significant as PCT correlation value = 0.000 (< 0.005) and PST value = 0.114 (> 0.05). Likewise, the average difference of babies' body weight between the first and second measurement was 573 and the relationship between babies' body weight before and after being exposed to Se'i was statistically significant as PCT correlation value = 0.000 (< 0.005) and PST value = 0.000 (< 0.05). The average difference of mothers' upper arm circumference between the first and second test was 0.17 and the relationship of mothers arm circumference before and after being exposed to Se'i was statistically significant, with PCT correlation value = 0.000 (< 0.005). Meanwhile, PST value = 0.420 (> 0.05), indicating no significant difference of mothers' arm circumference before and after being exposed to Se'i. The findings of the present study also report that the average difference of babies' upper arm circumference was 0.35 and the relationship of babies' upper arm circumference before and after being exposed to Se'i was statistically significant, with PCT correlation value = 0.000 (< 0.005). Meanwhile, PST value = 0.015 (> 0.05), indicating no significant difference of babies' arm circumference before and after being exposed to Se'i.

CONCLUSION

The current study reports that there is a relationship between food intake and nutritional status of postpartum mothers and their babies. It also suggests that there is no relationship between knowledge and nutritional status of postpartum mothers being exposed to Se'i and between nutritional intake and nutritional status of postpartum mothers being exposed to Se'i, and there is meaningful relationship between nutritional intake and nutritional status of postpartum mothers and their babies being exposed to Se'i. This study's findings indicate the needs for improvement in the types of dietary intake for postpartum mothers being exposed to Se'i to include foods containing sufficient nutritional content. The findings also suggest the need for inter-sectoral collaboration to provide high nutritional foods for postpartum mothers from low socio-economic level.

REFERENCE

1. UNICEF Indonesia. Ringkasan Kajian Kesehatan Ibu dan Anak. Indonesia: UNICEF 2012.
2. Syari M, Serudji J, Mariati U. Peran Asupan Zat Gizi Makronutrien Ibu Hamil terhadap Berat Badan Lahir Bayi di Kota Padang. *Jurnal Kesehatan Andalas*. 2015;4(3):729-36.
3. Nurhayati E. Indeks Massa Tubuh (IMT) Pra Hamil dan Kenaikan Berat Badan Ibu Selama Hamil Berhubungan dengan Berat Badan Bayi Lahir. *Jurnal Ners dan Kebidanan Indonesia*. 2015;4(1):1-5.
4. Sandra IH. Faktor sosial budaya yang mempengaruhi perilaku kesehatan masyarakat menuju paradigma sehat : suatu studi di Kota Padang. Jakarta, Indonesia: Universitas Indonesia 2016.
5. Notoadmodjo S. Promosi Kesehatan Teori dan Aplikasi. Jakarta: Rineka Cipta; 2005.
6. Selan VK. Makalah Budaya Kearifan Lokal Eme Khubu atau Rumah Bulat Orang Timor, Kupang. Kupang: Politeknik Negeri 2014.
7. Ilmu Pengetahuan. Isi kandungan gizi bubur beras. Jakarta: Kompas 2016.
8. Supriasa, Bakri B, Fajar I. Penilaian Status Gizi. Jakarta: Penerbit Buku Kedokteran EGC; 2002.
9. Sarafino. Dukungan Keluarga. Jakarta: Salemba Medika; 2003.
10. Dinas Kesehatan NTT. Lompatan Penurunan Kematian Bayi di Provinsi NTT. Jakarta: Dinas Kesehatan Pemprov NTT 2015.
11. Dinas Kesehatan NTT. Percepatan Penurunan Angka Kematian Ibu dan Bayi Baru Lahir (Revolusi KIA). Kupang: Dinas Kesehatan Pemprov NTT 2014.
12. Depkes RI. Riset Kesehatan Dasar. Jakarta: Badan Litbangkes; 2013.
13. Sugiyono. Metode Penelitian Kombinasi. Bandung: Alfabeta; 2011.
14. Polit DF, Beck CT. *Essentials of nursing research: Methods, appraisal, and utilization*. (6th ed.). Philadelphia: Lippincott Williams & Wilkins; 2006.

15. Kurniawati E. Hubungan Tingkat Pengetahuan Ibu tentang Gizi Dengan Status Gizi Balita di Kelurahan Baledono, Kecamatan Purworejo, Kabupaten Purworejo. Jakarta: Universitas Indonesia 2016.
16. Notoatmodjo S. Promosi Kesehatan dan Ilmu Perilaku. Jakarta: Rineka Cipta; 2007.
17. Wahyani. Hubungan tingkat pengetahuan ibu tentang gizi balita Dengan status gizi balita di wilayah kerja puskesmas Pleret, bantul, Yogyakarta. Yogyakarta: Sekolah Tinggi Ilmu Kesehatan Aisyiyah 2015.
18. Glanz K, Barbara K, K. Viswanath R. Health Behavior and Health Education (4th Edition) San Francisco: Jossey-Bass; 2008.
19. Notoatmodjo S. Promosi Kesehatan, Teori dan Aplikasi. Jakarta: Rineka Cipta; 2010.
20. Erwin L. Penelitian Kualitatif: Praktek Budaya Masyarakat Pedesaan Tentang Perilaku Pencarian Pengobatan Medis Neonatus Sakit di Wilayah Amanuban Kabupaten Timor Tengah Selatan. Kupang: Universitas Nusa Cendana 2016.
21. Feskanich. Reproducibility and validity of food intake measurement from a semiquantitative food frequency questionnaire. J Am Diet Assoc. 1993;93(7):790-6.
22. Almatier S. Prinsip Dasar Ilmu Gizi. Jakarta: Gramedia Pustaka Utama; 2002.
23. Machfoedz I. Pendidikan Kesehatan Bagi Promosi Kesehatan. Jakarta: Fitramaya; 2005.