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Meeting Energy and Nutrient Needs of Postnatal Women in *Tarak* Tradition

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ABSTRACT

This study was aimed at analyzing the provision of energy and nutrient needs of postnatal in *Tarak* tradition (food abstinence) and to enhance the technical personnel role on lactation management in exclusive breastfeeding practices. This study applied qualitative design with phenomenological approach as the first phase by involving women in mountain communities of Trenggalek who undergo three consecutive phases, namely third trimester, postnatal, and breastfeed for 6 months. While on the second phase (quasi experimental) was deployed to identify the provision of energy and nutrition of postnatal women in *Tarak* tradition and enhancing the technical personnel role of lactation management. The results showed that the respondents in mountain area of Bendungan Sub-district, Trenggalek Regency committed to practice *Tarak* during pregnancy and postnatal. The belief of eating pineapple that would cause miscarriage was the most common practice of it. The other practices are dietary restrictions of banana and *tape* (fermented cassava). Interventions through counseling on balanced nutrition and supplementary feeding for replenishing energy by 331 calorie/day and 19 gram/day protein for 30 days had a significant effect on weight gain and nutritional status measured with *LILA* (upper arm circumference). The increased weight and nutritional status indicated success in breastfeeding. Furthermore, this study also revealed the success of 6 months exclusive breastfeeding practice. Enhancing the technical personnel role on lactation management brought a significant effect on the raise of exclusive breastfeeding practices.

Keywords: *Tarak*, Lactation management, Exclusive breastfeeding

INTRODUCTION

The immediate cause of the undernutrition problem is the food intake which is mainly affected by family and environment food habits. The local custom also shaped one's perspective, assessment, and meaning of food. The food habits are closely related to environment, level of life, experience, as well as education. Not all food habits in the community positively support the importance of having adequate energy and nutrients needs. Some food taboos in the community are against the principle of having nutritious food for health. The food taboo is associated with emotion and, hence, most food taboos are embraced by women and children under the mother's care[(1)]. These dietary restrictions are usually committed by children under mother's care, pregnant women, and breastfeeding mothers.

A postnatal woman is socioculturally directed to undergo certain treatments led by a traditional birth attendant or someone who is believed to have experience of postnatal care. The treatments of postnatal usually cover drinking herbal medicine and abstinence for certain foods called *Tarak*. The provisions or taboos for the postnatal woman usually last for 40 days. A postnatal woman under this treatment usually consumes staple food like white rice and boiled vegetables. Food intakes such as chicken, meat, fish, eggs, tempe (fermented soybean), and salt are prohibited. In fact those foods contain essential nutrients such as proteins, fats, vitamins, and minerals needed for body's metabolic processes and recovery of reproductive organs, as well as for milk production. The insufficient supply of energy and nutrients during the postpartum will directly affect the amount and composition of breast milk.

Breastfeeding mothers are vulnerable to undernutrition problem since they are undergoing recovery, menstruation, and breastfeeding as well as replenishing their body needs. At the time of breastfeeding mothers lose both nutrients micro and macro, such as iron and calcium[(2)]. The volume of breast milk is influenced by emotions, such as stress or anxiety (in the first weeks), and the mother's nutritional state. Breast milk production from undernutrition mothers often decreases in number and eventually stops[(3)]. Mothers and their babies are the most aggrieved party of having nutrition problems for postnatal and infant growth caused by the taboos and antenatal care practiced by the mountain communities in Trenggalek.

Exclusive breastfeeding represents a natural baby feeding method. However, women are often uninformed or even misinformed about its benefits, how to breastfeed properly, and what to do when encountering breastfeeding problem. Breastfeeding is an art that needs to be re-examined since its success does not require special tools and expensive costs. All it takes are patience, time, breastfeeding knowledge, and support from family especially husband. The long experience of breastfeeding suggests that the major barrier to breastfeeding is the needs of proper breastfeeding knowledge and exclusive breastfeeding. Breast milk and breastfeeding are usually considered to be a naturally born thing that does not need learning. In fact breast milk especially exclusive breastfeeding is of great importance to learn. On the other hand, the technology development that leads the growth of dairy industry, accompanied by intensive illumination of infant formula and sometimes misleading advertisements, as well as increased participation of women in the workplace and modern lifestyle, greatly affect breastfeeding and its pattern in urban areas.

All healthcare providers of postnatal mothers and children play an important role in promoting breastfeeding practices although in reality due to lack of training some of them have not yet taken their part effectively[4]. Astutik demonstrated that modified 40 Hours WHO/Unicef Counseling Module in Lactation Management significantly improved the practice of exclusive breastfeeding in Malang city[5].

Considering its significant importance, an in-depth study on the provision of energy and nutrition needs of postnatal women in *Tarak* tradition and enhancing the role of technical personnel on lactation management in exclusive breastfeeding practices in mountain communities in Trenggalek East Java was urgently required. All healthcare personnel responsible for providing care of the mother and baby need to improve the skills of supporting and promoting breastfeeding practices.

METHODS

The first phase of the research used qualitative design with phenomenological approach involving postnatal women in mountain communities in Trenggalek as subjects to obtain description of the provision of energy and nutrient needs of postnatal women in *Tarak* tradition and enhancing the technical personnel role on lactation management by in-depth interview, observation, and Food Recall 24 hours, and administering lactation management activities based on 40 hours WHO / UNICEF breastfeeding counseling module[6].

The second phase of this study used Quasi Experimental design with Pre and Post Test Group Design about postnatal health in *Tarak* tradition and enhancing the technical personnel role on lactation management in exclusive breastfeeding practices in Trenggalek Regency. The study was conducted in Trenggalek Regency, Indonesia from March to December 2016.

The subjects of the study were postnatal women from 0-40 days and who breastfed the baby up to 6-month-old. The administration was conducted by visiting every postnatal woman from P0 to P3 carrying out *Tarak* tradition, traditional birth attendants, midwifes and community leaders. In this case, postnatal mothers taken as subjects carried out the whole series of activities in the *Tarak* tradition practiced by the mountain community in the form of dietary restrictions considered to cause the extended postpartum period up to for 40 days.

While the population for Quasi Experimental research involved all pregnant women of third trimester, final trimester, and postnatal period until 6 months old baby who exclusively breastfed in Bendungan sub-district, Trenggalek, East Java. The samples took postnatal women, midwifes and pre and postnatal, posyandu (integrated service post) cadress for technical personnel role on lactation management. Purposive sampling was applied so the sample size was determined based on the quality or the characteristics of the respondents.

To gain more valid data, this study searched deeper from informants consisting of community leaders, traditional birth attendant, pre and postnatal information center cadress, and midwives. This population was taken into the sample of the study using the formula Stanley[7].

Research Phases

1. The identification of dietary habits in *Tarak* tradition was collected through a group discussion consisting of community elders, midwives, pre and postnatal information center cadress, and postnatal family through in-depth interviews.
2. The provision of energy and nutrition of postnatal mother was conducted by giving intervention in the form of balanced nutrition counseling for postnatal and *PMT* (supplementary feeding) which is rich in iron in the form of:
   - Soybean Milk-Cereal-Kelor (moringa oleifera) 36 g, with energy composition 177 Calories, Carbohydrates 26 g, Protein 15 g, and Fat 6 g.
   - Tempe (fermented soybean), Kelor (moringa oleifera), Biscuits 30 g with energy composition 154 Calories, Carbohydrates 18 g, Protein 4 g, and Fat 8 g.

   The *PMT* was served as a morning snack (10.00 am) and an afternoon snack (03.00 pm to 4.00 pm) on a daily basis until 40 days.
3. The primary data collection was taken through in-depth interviews, observations and 24 hours Food Recall. In-depth interviews were aimed to obtain data on maternal nutritional need provision during *Tarak* practice and dietary restrictions. For more connived data, this study conducted interviews to 4 informants. The

Observations was administered through the use of check list to get dietary data (food pattern) and activity of care during the *Tarak* practice. To obtain data on diet (number, type and frequency) of post natal women (0 40 days), 24 hours Food Recall was carried out three times on different days.

4. Enhancing the Role of Technical Personnel on Lactation Management (Midwife and pre and postnatal information center (Posyandu) cadres based on Modified 40 Hour WHO/Unicef breastfeeding Module[5], includes:
   a. Why breastfeeding is important
   b. How to breastfeed properly
   c. Observing breastfeeding activities
   d. Healthcare services
   e. Building confidence and giving support
   f. Breast conditions
   g. Low birth weight and infants
   h. Increase breast milk production and re-lactation
   i. Maintaining breastfeeding activities
   j. Nutrition, health, and fertility of women

Table 1. The implementation of enhancing the role of technical personnel on lactation management (midwives and posyandu cadres) based on modified 40 hours breastfeeding module of WHO/Unicef

Day	Activities	Speaker
I	a. Pre-Test b. Why breastfeeding is important c. How to breastfeed properly d. Observing breastfeeding activities	Breastfeeding Counselor
II	a. Healthcare services b. Building confidence and giving support c. Breast conditions d. Low birth weight and infants	Breastfeeding Counselor
III	a. Increasing breast milk production and re-lactation b. Maintaining breastfeeding activities c. Nutrition, health, and fertility of women d. *Post-Test*	Breastfeeding Counselor
IV	Observation of exclusive breastfeeding practice	Breastfeeding Counselor

The role of technical personnel on lactation management in promoting exclusive breastfeeding was measured by observing through clinical practice forms and checklists up to the exclusive breastfeeding.

5. The enhancement of exclusive breastfeeding practice
   The enhancement of Exclusive Breastfeeding practices was measured by clinical practice forms and checklists:
   a. Breastfeeding observation, the history of breastfeeding
   b. Listening and learning skills
   c. Confidence and support skills
   d. Counseling skills
   e. Assessing and improving services.

Data Analysis

The data, obtained from interviews and observation, were analyzed inductively using Miles and Huberman model[8]. The qualitative data were taken interactively and continuously until saturated and then treated through data reduction, data display and data conclusion.

In data reduction phase, the researcher summarized, selected the main points, focused on important things, and looked for the theme and pattern. The data were then displayed to find the pattern and determine the data based on the relationship between patterns. The next phase was conclusion drawing or verification. Certain categories were set up based on its importance and finally to draw conclusions.

To analyze the energy intake and maternal nutrition was conducted through converting the URT (household size) to weight size (gram) using URT conversion list and weight, and then analyzing the food intake in the form of energy and nutrients (carbohydrate, protein, fat, vitamins, and minerals). Processed in nutry-survey software the results were the data of energy and nutrient intake (carbohydrate, protein, fat, vitamins, and minerals) which then compared to the AKG (nutritional adequacy rate) to determine the adequacy level of energy consumption and nutrient.

For the analysis of Quasi Experimental research Paired Sample T-Test was opted to find out the enhancement of the role of technical personnel of lactation management in exclusive breastfeeding practice. In

selecting the t-test formula some considerations taken into account were the number of samples and the homogeneity. This research has passed the Etical Clereance from Medical Research Ethics Commission of State Health Politecnic of Malang, register number: 217/KEPK-POLKESMA/2016.

RESULTS

The research result indicated that people of Bendungan sub-district in Trenggalek East Java, as most answers of Indonesian people provide, were not convinced to have been full before consuming rice as their proper meals. In addition, they consumed a wide range of side dishes to complete rice with no careful consideration of the nutrients. When being questioned on what food they have had as main meals, immediate answers of most involved informants were rice.

Food abstinence was no longer popular among pregnant and post-term labour women in the area of research. Instead, efforts to improve people's knowledge of nutrients has been taken by some medics through health eduaction specifically for pregnant and post-term labour women. This way, people have been well-informed about medically recommended food for pregnant and post-term labour women and eventually realized that food layoof was not a good habit in medical terms.

The research result indicated that pineapple, male flower of banana tree and fermented cassava were popularly believed tobe one of fruits should be laid off by pregnant and women of post-term labour in Bendungan sub-district Trenggalek regency as it was perceived to be able to cause miscarriage. Yet, on the other hand, parents obligate their pregnant and pre-labor daughters to consume various fruits perceived to be good for prospective infants.

Table 2. Characteristics of pregnant and postnatal women

Sample Characteristic of Third Trimester pregnant women and postnatal women	Frequency	Percentage
Age (year)		
• 16 – 18	13	65.0
• 19 – 29	7	35.0
Level of education		
• Junior high school	16	80.0
• Senior high school	4	20.0
Employment		
• Unemployed	18	90.0
• Private sector	2	10.0
Level of income		
• Poor	4	20.0
• Not poor	16	80.0
Number of family member (people)		
• 3-4	16	80.0
• > 4	4	20.0

Table 2 indicated that at the level of education, most sample (80%) only reached the level of Junior High School. Most people of Bendungan sub-district in Trenggalek regency believe that female children should only go to junior level of education. They then will likely to be married. This way, most women (90%) are not professionally employed and only dealing with household chores. Whereas, around 80% of samples were in the category of not poor as samples were mostly married at young age (after graduating from junior high schools) to spouses of rich families.

The research result indicated that the average level of energy and nutrient consumption including carbohydrate, protein, fat, Fe, and vitamin C after *PMT* intervention tended to increase, as shown in table 3. *PMT* Intervention of local food is what follows:

- Cereal milk - 36 kelor soybeans with energy composition of 177 calories, 26g carbohydrates, 15g protein, and fat 6g.
- Biscuits - tempe kelor 30 g with energy composition of 154 calories, carbohydrates 18 g, protein 4 g, and fat 8 g.

Thus, the intervention of PMT with energy of 331 calories/day and protein 19 grams/day for 30 days showed a significant effect ($p < a$ 0,05) on the level of energy and nutrient consumption, although the level of consumption of Fe and C vitamins is still in the category of Heavy rate deficit. This is due to *tarak* tradition implementation by pregnant women third trimester and postnatal women of the mountainous region Bendungan District - Trenggalek Regency which influenced dieting. For instance, unbalanced nutrition and the variety of food consumed is very low. In fact, Mineral Fe and vitamin C is a nutrient from vegetables and fruits. In dieting pregnant women of third trimester and postnatal women involved as samples rarely consume vegetables and fruits.

Table 3. Influence of *PMT* on nutrition energy and nutrition level of postnatal women

Energy and Nutrition	Consumption Level of Energy and Nutrition								p Value
	Pre *PMT*				Post *PMT*				
	Consumption			%	Consumption			%	
Energy (Calory)	1318	±	271	65	1892	±	281	93	0.001*
Carbohydrate (g)	199	±	54	69	270	±	26	93	0.035**
Protein (g)	65	±	22	108	71	±	26	118	0.041**
Fat (g)	31	±	13	44	62	±	18	90	0.027**
Fe (mg)	6	±	3	40	10	±	5	69	0.019**
Vitamin C (mg)	37	±	18	38	60	±	63	60	0.017**

*) Significant at α=0.01
**) Significant at α=0.05

The research result showed that the intervention of *PMT* with energy of 331 calories / day and protein 19 gram / day for 30 days showed a significant influence (p = 0.050) to the weight gain of sample pregnant women of third trimester and postnatal women in Bendungan Sub-District of Trenggalek Regencya, as shown at table 4. It is presumed that consumption control of pregnant women of third trimester and postnatal women with PMT interventions influences the increase of energy consumption and nutritions which likely impacts on weight gain.

Table 4. The influence of *PMT* on weight of pregnant women of third trimester and postnatal women

PMT Intervention	Body Weight (Kg)		p Value
	Mean	SD	
Pre	60.7	14.5	0.050**
Post	62.5	15.4	

**) Significant at α=0.05

KEK (Chronic Energy Deficiency) is a condition when one has a long-term energy and protein deficiency indicated through *LILA* <23.5 cm. KEK or malnutrition pre and post pregnancy will cause *BBLR* (low baby weight). This condition also causes newborn anemia, susceptible to infection, abortion, and slow inhibited the growth of fetal brain.

The research result indicated that the intervention of *PMT* with energy of 331 Calories / day and protein 19 gram / day for 30 days showed a significant effect (p = 0,001) upon nutrition improvement (*LILA* as indicator) of sample pregnant women of third trimester and postnatal women in Bendungan Sub-district, Trenggalek regency as illustrated at table 5. Similarly, The impact of recovery *PMT* interventions on weight gain, nutrition improvement (*LILA* as indicator) is also presumed due to the control consumption of samples pregnant women of third trimester and postnatal women with *PMT* recovery interventions affecting the improvement of energy consumption and nutrition which affect the improvement of nutrition (LILA as indicator).

Table 5. The distribution of pregnant women of third trimester and postnatal women based on nutritional status (*LILA* as indicator)

Nutritional Status (*LILA*)	Number of Samples				*p* Value
	Pre *PMT* Intervention		Post *PMT* Intervention		
	n	%	n	%	
KEK	9	45.0	2	10.0	0.001*
Non KEK	11	55.0	18	90.0	
Total	20	100.0	20	100.0	

*) Significant at α=0.01

Interventions (techniques and materials) of modified 40-hour WHO/UNICEF breastfeeding counseling module to 10 hours indicated the increase of knowledge of lactation management in village midwives and Posyandu cadress in Bendungan sub-district, Trenggalek. The knowledge of lactation management before intervention ranging from 40 to 92 with the average of 63.0 ± 16.2 increased after the intervention implementation to 52 - 94 with the average of 76.8 ± 14.7 as illutrated in Table 6. Statistical analysis results of Paired T-Test at 95% level of confidence showed significant difference (*p = 0,016*) of knowledge of lactation management before and after intervention Modification of Breast-feeding of WHO / Unicef 40-Hour Module.

Table 6. Knowledge of lactation management of midwives and posyandu cadress pre and post intervention

Education Intervention of Lactation Management	Knowledge of Lactation Management		P Value
	Mean	SD	
Pre	63.0	16.2	0.016**
Post	76.8	14.7	

**) Significant at α=0.05

Table 6 showed a significant increase of lactation management knowledge.

DISCUSSION

Food Availability in Bendungan Sub-district, Trenggalek Regency

When being questioned on what food they have had as main meals, immediate answers of most involved informants were rice. The perception of what is called as whether or not main menu is obviously social construction**.** People perceive that they have already had their meals when they have consumed rice. Moreover, Foster & Anderson suggested that people generally perceive that food quantity is important and it will become a not-easy-to-change habit or even unchangeable as particular food is perceived to have deep meaning[(9)].

The consumption of side dishes with animal protein by pregnant and post-delivery women is relatively low in Bendungan sub-district. People prefer both less expensive and more accesible food such as tempe and tofu. They even consume only a few sea food. Moreover, the availability of few sea food is fairly limited in Bendungan sub-district as it is relatively mountainous area throughout Trenggalek Regency. The limited availability of few sea food at the fishmonger's raise its price considerably. People tend to purchase affordable side dishes. Novianti suggested that logistic availability depends on geographical, climate, seasonal cycle and soil condition[(10)].

In medical terms, dieting with unbalanced menu is not strongly suggested. One portion of food should contain a wide range of nutrients. According to *Pedoman Gizi Seimbang / PSG* (balanced nutrition guidelines), daily food should contain sufficient nutrients with type and number specifically required by human body. Therefore, principle of food variety, physical activities, cleanliness, maintenance of normal weight should be taken into consider to avoid nutritious problems[(11)].

Food Abstinence by Pregnant Women of Third Trimester and Postnatal Women in *Tarak* Tradition

Food abstinence is a personal activity performed in a particular community in which the person in chanrge do not consume or even avoid particular food due to their obedience to cultural attitude and familial implementation from generation to generation in a certain condition[(9)]. The food abstinence was well-known as "*tarak*" in the research area. However, food abstinence habitually implemented diminish as the time goes by as people's knowledge of health and food have improved significantly so that they can selectively sort out good food among medically inappropriate one.

The research result indicated that pineapple, male flower of banana tree and fermented cassava were popularly believed tobe one of fruits should be laid off by pregnant and women of post-term labour in Bendungan sub-district as it was perceived to be able to cause miscarriage. Yet, on the other hand, parents obligate their pregnant and pre-labor daughters to consume various fruits perceived to be good for prospective infants.

Tarak or food abstinence is self-avoidance of particular food such as chicken meat based on personal or even communal preference[(12)]. *Tarak* occurs in a community based on some factors such as influence of cullture (custom, tradition, ancestral prohibition) over daily habits saying that pregnant women especially those in postnatal period were perceived to produce unpleasant odour, suffer from long-term disgusting vaginal wetness, have impaired immunity and terrible mental and physical condition. Therefore, balanced nutrients is particularly needed during third trimester pregnancy and postnatal period. As a matter of fact, in medical terms, no specific food is forbidden unless those likely to cause allergy. Thus, laying off food or *tarak* during third trimester pregnancy and postnatal period especially over food with essential protein such as animal protein is a meaningless act and could cause danger. Parents' prohibition or *Tarak* during third trimester pregnancy and postnatal period was apparently a myth suggesting no longer consumption of a number of food such as fish, egg, chicken meat, and particular vegetables during third trimester pregnancy and postnatal period as they are perceived to harm health due to a lack of energy availability and nutrients. Hence, paramedics were encouraged to provide education through coaching and counselling so that during third trimester pregnancy and postnatal period women did not implement *Tarak* to prevent them from medical problems such as insufficient availability of energy and nutrients.

The quality as well as the quantity of food consumed by pregnant women of third trimester and postnatal women will likely influence the production of breast milk. Therefore, pregnant women of third trimester and postnatal women should obtain extra energy as much as 800 chalories used to produce sufficient breast milk to reach exclusive breast milk provision and for the mother act on regular basis. breast milk provision is vitally important as it becomes basic food for babies. With breast milk babies will likely grow perfectly as a healthy person, gentle and have high IQ as breast milk contains Docosahexaenoic Hexanoid Acid (DHA). Baby with breast milk will likely to possess higher IQ compared to those of instant milk.

During breast-feeeding, women with good nutrients, will produce breast milk around 800 ml consisting of 600 of chalories on average while women with less nutrients will tend to produce relatively low breast milk. However, nutrients will never influence the quality of breast milk but the volume. The energy addition for 3 months postnatal period reach 500 chalories. This is basedon assumption that each 100 ml of breast milk will likely be able to provide energy 67-77 chalories. The energy conversion efficiency contained in food become breast milk energy as much as 80% ranging 76-94%. Thus, the amount of energy required to produce 100 ml of

breast milk is about 85 Calories. The average production of breast milk per day is about 800 ml which equals to 600 calories. Whereas, the energy spent to produce breast milk as much as 800 ml or about 750 Calories. When lactation lasts more than 3 (three) months, the mother's weight will decrease as that long. It means that the amount of extra energy should be increased.

The additional energy is actually only 700 calories, while the remaining, about 200 calories, were taken from indogenous reserves in the form of a roll of fat during pregnancy. As the energy conversion efficiency shows up only 80 - 90%, the energy from food of 500 calories will only be the energy of breast milk as much as 400 - 450 Calories. To produce 850 ml of breast milk, the required energy is about 680 - 807 Calories (750 Calories on average). When 500 calories are added during diet, only 400-450 calories are converted, the indogenous energy reserves should be then mobilized on daily basis by 300-350 Calories which equals to 33-38 grams of fat. Thus, fat deposits during pregnancy will reach 4 kg or equals to 36.000 Calories and will run out after 105 - 121 days or 3-4 months. This will confirm that breastfeeding will enable mothers to obtain their normal weight quickly. This will also counter people's perception that breastfeeding will make the mother's body hugely fat. During breastfeeding, mothers need extra protein above normal for 20 grams / day. This way, every 100 ml of breast milk contains 1.2 grams of protein. Thus, 830 ml of breast milk contains 10 grams of protein**.**

The conversion efficiency of food protein to breast milk protein is only 70%. The increase is shown not only for transformation into milk protein, but also for the synthesis of hormones which produce (prolactin), and which also release breast milk (oxytocin). In addition to energy and protein, pregnant women of third trimester and postnatal women are recommended to meet other additional nutrients.

Sufficiency Level of Energy and Nutrient Consumption of Pregnant Women of Third Trimester and Postnatal Women in *Tarak* Tradition

Based on *PMT* recovery guidelines for pregnant women, postnatal women, and breastfeeding, KEK that the energy content provided is presumably 180-300 Calories and 17 grams of protein[(11)]. *PMT* intervention is one of efforts to increase the level of energy and nutrient consumption for pregnant mother of third trimester and postnatal women especially KEK to fulfill the energy and nutrition needs. The increase of the level of energy and nutrient consumption from the high rate deficit category (<70% AKG) to normal category (90-119% AKG) is seemingly caused by several factors after some consideration in the selection of *PMT* intervention products so that the sample rate of *PMT* for 30 day is very high or consumed daily. This is one of the factors in increasing energy consumption and nutrition. The selection of *PMT* intervention products runs through consideration that the product is well known and has good taste so that the product becomes well accepted. Society welcome it well as it is practical, has a relatively long-term safe, and easy to serve. Another aspect to consider is the energy and nutritional composition of *PMT* intervention products such as Cereal Milk + Soybean Kelor and Biscuits + Tempe Kelor. Tempe kapang can produce fitase enzymes which are capable to decompose phytate. By the time phytic acid is decomposed, some minerals such as iron, calcium, magnesium, and zinc become more available to use by the body[(13)]. Furthermore, WHO reported that fermentation conducted for several days can reduce all phytate and improve bioavailability of Fe. Lean suggested that the digestibility of tempe works better as protein and fat are partially hydrolyzed. Various vitamins from the B-complex group increase, even synthesized by B12 unidentified in soybeans prior to fermentation[(14)].

Some scientific research has proved that Moringa leaf keeps a number of active compounds and the most complete nutrition compared to any plant[(15)]. The results of Fuglie's research in Krisnadi showed that Moringa leaves contain vitamin A, vitamin B, vitamin C, calcium, potassium, iron, and proteins in very high amounts and are easily digested and assimilated by the body[(16)].

PMT recovery interventions of pregnant women third trimester and postnatal women involved as samples, in addition to the energy and nutrition of their products, other factors affecting the level of consumption obedience should be considered. The results showed that pregnant mother of third trimester and postnatal women took *PMT* product every day for 30 days. The nature or quality of organoleptics, preferences, acceptability, and product variation are factors that also affect the level of consumption obedience.

As the result of the research conducted by Prihananto that the average level of obedience consumption of pregnant women through *PMT* product provision in the form of biscuits showed the highest level of obedience (94.0%), then followed by milk and vermicelli respectively 93.5% and 92.5%[(17)].

The Influence of *PMT* Intervention on Nutritional Status of Sample Pregnant Women of Third trimester and postnatal women

The research result indicated that balanced nutrition education interventions and energy recovery *PMT* of 331 Calories/day and protein 19 grams/day for 30 days of pregnant women of Third trimester and postnatal women in *tarak* tradition in Bendungan Sub-district have a significant influence over the improvement of weight gain and nutrition followed by all samples pregnant women of third trimester and postnatal women. It obviously showed the succes of breastfeeding as sample mother successfully provide breat milk exclusively in the period of 6 (six) months managed by Ministry of Health of Indonesia (2004) according to the recommendation of WHO[(18)]. It is in

line with Institute of Medicine that normal maternal nutrition during breatfeeding refers to mobilization of mother's body fat in producing milk and the fat deposit is higher than the nutrition[19]. Krasovec suggested that mother's nutrition during breastfeeding is the effect of their nutrition before and during pregnancy (weight gain during pregnancy)[20]. It is unlikely that all mothers will have the same ability to breastfeed. The the mother's nutrition before pregnancy, during pregnancy, and during breastfeeding might be closely related to the success of breastfeeding.

From sample pregnant women of third trimester and postnatal women it can be assumed that all nutrients basically require additional energy through protein and minerals such as iron and calcium. The energy saved in the protein is approximately as much as 5,180 calories and fat of 36,337 calories. In order to save the energy, an additional energy of 26.244 Calories are required so that it can be used to convert energy by changing food into energy through metabolism. Thus, the total amount of energy should be available during pregnancy is 74.537 Calories or 80.000 Calories. To obtain an energy quantity per day, the sum is divided by 250 (estimated pregnancy period in days) so that additional energy of 300 calories are achieved.

Some methods used to identify the nutrition of pregnant women, among others: weight gain monitor during pregnancy, *LILA* and hemoglobin (Hb) level measurement. Weight gain during pregnancy ranges from 10 to 12 kg, in which the first trimester increases less than 1 kg, trimester II about 3 kg, and third trimester about 6 kg. Weight gain can also be used as an indicator of fetal growth monitor. Pregnant women are at risk of malnutrition. energy and nutrition deficiency will have a major impact on the growth of fetuses and babies to be born.

Enhancing Midwives' Role on Lactation Management using Modified 40-Hour WHO/UNICEF Breastfeeding Counseling Module

Table 6 showed a significant increase of lactation management knowledge. The level of education of Diploma III and Diploma IV of Midwifery and level of education of senior high school for Posyandu cadres likely have considerable influence over the increase of lactation management knowledge. This is in line with the research by Roebijoso that knowledge-based education and experience are crucial factors in changing knowledge, attitudes, and skills[21]. In addition, Yuliarti suggested that the lower the level of education, the lower one's basic ability to think for decision making[22]. Likewise, Anwar states that lactation counseling greatly influences knowledge, attitude, and skills[23]. Midwives and posyandu cadress involved in the research were classified in productive age. Thus, they were very likely able to get information easily and were even able to recall it correctly. Similarly, the experience of midwifery care practices in accordance with their respective working periods can accelerate the process of absorbing and changing the information.

CONCLUSION

1. Informant's (community) understanding about food abstinence during pregnancy and postnatal period in tarak tradition of mountainous region of Bendungan sub-district, Trenggalek among others: pregnant women are not allowed to consume pineapples as it can cause miscarriage. Yet, on the other hand, parents suggest pregnant women to consume numbers of fruits as they are good for the fetus.
2. Counseling on balanced nutrition and energy recovery PMT of 331 Calories/day and 19 gram/day protein for 30 days of pregnant women of third trimester and postnatal women in the tarak traditionof mountainous sub-district of Bendungan, Trenggalek district showed a significant influence upon weight gain and nutritional status (LILA as indicator).
3. The Increase of weight and nutritional status (LILA as indicator) show breastfeeding success. In addition, the women involved as samples are hoped to successfully give 6-month exclusive breast milk.
4. Modified program (technique and material) of breastfeeding counseling of WHO/Unicef from 40 hour module to 10 hour shows the knowledge increase of lactation management of Village Midwife and Posyandu Cadres in the mountainous area of Bendungan sub-district, Trenggalek regency.
5. Role of village midwives and Posyandu cadress on lactation management shows a significant effect on the improvement of exclusive breastfeeding practices.

Suggestion

The energy and nutrient needs for third trimester pregnant women and postnatal women in mountainous sub-district of Bendungan, Trenggalek that embrace the *tarak* tradition must be properly fulfilled so that breastfeeding through an exclusive breastfeeding program for 6 (six) months run successfully.

REFERENCES

1. Suyatno. The Influence of Traditional Breastfeeding Food (MP-ASI) on the incidence of ARI, Diarrhea and Infant Nutritional Status in The First 4 Months (Pengaruh Pemberian Makanan Pendamping ASI (MP-ASI) Tradisional terhadap kejadian ISPA, Diare, dan Status Gizi Bayi pada 4 Bulan Pertama). UGM; 2000.
2. Roesli U. Know About Exclusive Breastfeeding (Mengenal ASI Eksklusif). Jakarta: Trubus Agrundaya; 2000.

3. Juliastuti R. Relationship between Knowledge Level, Mother Employment Status, and Implementation of Early Breastfeeding with Exclusive Breastfeeding (Hubungan Tingkat Pengetahuan, Status Pekerjaan Ibu, dan Pelaksanaan Inisiasi Menyusu Dini dengan Pemberian ASI Eksklusif). Thesis. Surakarta: Universitas Sebelas Maret; 2011.
4. Depkes RI. Breastfeeding Counseling Training, Trainer's Guide (Pelatihan Konseling Menyusui, Panduan Pelatih). Direktorat Bina Gizi Masyarakat. Jakarta: Direktorat Jenderal Bina Kesehatan Masyarakat; 2007.
5. Astutik P. Modified Counseling Breastfeeding WHO / Unicef 40 Hours Module in Lactation Management for Increased Exclusive Breast Milk Practice in Malang (Modifikasi Konseling Menyusui Modul 40 Jam WHO/Unicef dalam Manajemen Laktasi terhadap Peningkatan Praktek ASI Eksklusif di Kota Malang). Report. Malang: Politeknik Kesehatan Kemenkes Malang; 2015.
6. WHO. Supplemental Feeding for Children (Pemberian Makanan Tambahan untuk Anak). Jakarta: EGC; 2003.
7. Steel RGD, Torrie JH. Principles and Procedures of Statistics (Prinsip dan Prosedur Statistika). Jakarta: Gramedia; 1991.
8. Notoatmodjo S. Health Research Methodology (Metodologi Penelitian Kesehatan). Jakarta: Rineka Cipta; 2012.
9. Foster, Anderson. Health Anthropology (Antropologi Kesehatan). Jakarta: UI Press; 2006.
10. Novianti R. Powerful Way to Provide Breast Milk for Healthy and Smart Babies (Cara Dahsyat Memberikan ASI untuk Bayi Sehat dan Cerdas). Yogyakarta: Octopus; 2009.
11. Kemenkes RI. Guidelines for Delivery of Supplementary Food Supplement for KEK Pregnant Women and Underfives with Malnutrition (Pedoman Penyelenggaraan Pemberian Makanan Tambahan Pemulihan bagi Ibu Hamil KEK dan Balita Gizi Kurang). Jakarta: Kemenkes RI; 2012.
12. Lestari D. Maternal Factors in Exclusive Breastfeeding (Faktor Ibu dalam Pemberian ASI Eksklusif). Jakarta: Universitas Indonesia; 2009.
13. Astawan M. Nutritional content of various food ingredients (Kandungan Gizi Aneka Bahan Makanan). Jakarta: Gramedia; 2004.
14. Lean MEJ. Food, Nutrition, and Health Science (Ilmu Pangan, Gizi, dan Kesehatan). Translater: Nilansari & Fajriyah. Yogyakarta: Penerbit Pustaka Pelajar; 2013.
15. Mardiana L. Magic Leaves to Quell Disease (Daun Ajaib Tumpas Penyakit). Jakarta: Penerbit Swadaya; 2012.
16. Krisnadi AD. Kelor: Super Nutrition (Kelor: Super Nutrisi). Pusat Informasi dan Pengembangan Tanaman Kelor Indonesia; 2015.
17. Prihananto V. The Influence of Microfood Multi-nutritional Foods on the Nutritional Status of Pregnant Women and Birth Weight (Pengaruh Pangan Fortifikasi Multi Gizi Mikro terhadap Status Gizi Ibu Hamil dan Berat Badan Bayi Lahir). Dissertation. Bogor: Institut Pertanian Bogor; 2007.
18. Depkes RI. National Strategy for Increasing Breastfeeding (PP-ASI) (Strategi Nasional Peningkatan Pemberian ASI [PP-ASI]). Jakarta: Depkes RI; 2004.
19. Institute of Medicine. Nutrition During Pregnancy. Washington DC: National Academy Press; 1990.
20. Krasovec K. Prepregnancy Weight. Background Issues. Maternal Nutrition and Pregnancy Outcomes. Anthropometric Assessment. Pan American Health Organization; 1991.
21. Roebijoso J. Relationship between Employment Status, Education, Mother Knowledge Level, and Midwife Support with Exclusive Breastfeeding in the Work Area of Gribig Community Health Center (Hubungan antara Status Pekerjaan, Pendidikan, Tingkat Pengetahuan Ibu, serta Dukungan Bidan terhadap Pemberian ASI Eksklusif di Wilayah Kerja Puskesmas Gribig). Malang: Universitas Brawijaya; 2012.
22. Yuliarti N. The Wonders of Breast Milk as the Best Food for Children's Health, Intelligence and Agility (Keajaiban ASI Makanan Terbaik untuk Kesehatan, Kecerdasan, dan Kelincahan Si Kecil). Yogyakarta: Andi; 2010.
23. Anwar F. Enriched Biscuits Fish and Iron-Folate Dexterity and Its Effect on Anemia Status of Pregnant Women (Pemberian Biskuit yang Diperkaya Tepung Ikan dan Zat Besi-Folat dan Pengaruhnya terhadap Status Anemia Ibu Hamil). The Indonesian Journal of Community Nutrition and Family Studies. 2004;28(2).