Annex 14

Nutrition during pregnancy and interventions for nutritional problems during pregnancy

Nutrition during pregnancy and lactation

Nutrition during the preconception period as well as throughout the pregnancy has a profound influence on the course and outcome of the pregnancy as well as mother's performance during lactation. The association between pre pregnancy weight and BMI, total weight gain and the rate of weight gain in pregnancy and the pregnancy outcome is significant. Weight gain in the second half (after 20 weeks) of pregnancy has more pronounced effect on the growth and the birth weight of the baby. Poor weight gain especially in the third trimester is associated with low birth weight of the baby.

Low birth weight is associated with a higher incidence of infant mortality and morbidity, poor cognitive development and learning disabilities. They are also at a higher risk of been subjected to the non-communicable disease such as heart disease, hypertension and diabetes mellitus in later life. Thus, it appears future health of mankind depends to a greater extent on the nutritional foundation laid during the prenatal life. Therefore, nutrition of the pre pregnant women as well as the pregnant mothers should receive utmost attention in order to have a baby with a good birth weight.

Nutrition and care during Pre pregnancy

Pre pregnancy weight and BMI are strongly linked with the pregnancy outcome. Therefore, nutrition and care of the pre pregnant woman is an essential component in the strategy for low birth weight reduction. The existing health care system offers following services to improve the nutritional and health status of the pre pregnant woman.

- Early identification of couples getting married and provision health services and health education
- Registration of all eligible couples by PHM and provision of necessary services.
- Nutritional assessment and take necessary actions:
    - Check Body Mass Index (BMI) do necessary interventions according to the BMI
    - Do Haemoglobin estimations and if anaemic, take necessary actions

The women who intend to become pregnant should be advised that their nutritional status should be optimal at the time of conception for a successful pregnancy.

Provide Folic acid 5mg daily, for women who expecting a pregnancy.

Ascertain that they have protected with Rubella immunization.

Management of pre-pregnant women with a BMI less than 18.5kg/m2

- Take 24 hour dietary recall and assess adequacy of diet (calorie, protein and micronutrient)
- Nutrition counseling on appropriate diet.

  -Help to modify diet by increasing amount of starch based foods such as rice, manioc, other cereals, flour based foods at each meal

  -Consuming 1-2 extra meals than other days

  -Using 1-2 table spoonful of oil

  -Including fish/dried fish/egg, pulses, vegetables and green leaves to daily diet

- Asses dietary habits, food taboos, misconceptions and correct if there are any negative one
- Excessive work load may have an influence on the weight gain. Therefore, assess the workload and act accordingly
- Screen for the presence of any illnesses by referring to the MOH
- Follow up and monitor weight gain monthly
- If weight gain is inadequate after 6 months refer to MOH for further advice.

Management of pre- pregnant women with BMI more than 24.9 kg/m2

- Take 24 hour dietary recall and assess adequacy / excessive consumption of diet (calorie, protein and micronutrient)
- Nutrition counseling on appropriate diet.(to reduce starch, fats, & sugar)
- Emphasize the importance of regular exercise
- Assess dietary habits, food taboos, myths and misconceptions and correct if there are any negative ones.
- Should be screened for Diabetes Mellitus, Hypertension, Hypercholesteraemia by referring to the MOH.
- Follow up and monitor weight gain monthly
- If weight reduction is inadequate after 6 months refer to MOH for further advice.

Nutritional requirements and advice during pregnancy

Pregnant women should be advice to consume variety of locally available healthy foods containing adequate amounts of cereals, yams, animal foods, pulses, vegetables, green leaves, fruits and milk to meet increasing nutritional demands in pregnancy. Mothers should be encouraged to consume 3 nutritious main meals supplemented by one or two additional small meals. They should be advised to consume **additional** ½ a spoonful (spoon made of coconut shell) of rice at each meal with additional amounts vegetables green leaves, pulses and cereals.

The amount of food a woman should consume during pregnancy varies according to her level of physical activity and her BMI at the start of pregnancy. The calorie and other nutritional requirement during pregnancy is stated in the table. The daily menus should be planned to incorporate all the essential nutrients using locally available food items.

Calorie requirement during pregnancy

For women with normal BMI

Light exertion 2000 kcal

Moderate exertion 2375 kcal

Heavy exertion 2750 kcal

The recommended daily dietary allowances during pregnancy

	Age of woman		**Additions for**	
	16-17yrs	**18-30yrs**	**Pregnancy**	**Lactation**
Energy, kcals	2150	1750	360	700
Protein, g	44	44	07	19
Vitamin A, µg	750	750	-	450
Vitamin D, µg	2.5	2.5	7.5	7.5
Thiamin, mg	0.9	0.8	0.14	0.30
Riboflavin, mg	1.3	1.3	0.21	0.45
Niacin, mg	14.2	13.2	2.31	4.95
Folic Acid, µg	200	200	200	100
Vitamin B12,µg	2.0	2.0	1.0	0.5
Ascorbic acid, mg	30	30	20	20
Calcium, mg	600	500	600	600
Iron, mg	28	28	60	60
Zinc, mg	22	22	5	22

Nutrition and care of the lactating mother

Nutrition during postpartum period is extremely important due to following reasons:

i. To replenish the lost nutrients during pregnancy and labour

ii. Mothers should exclusively breast feed the child till 6/12.

iii. As the principle care taker of the infant, mother needs additional calories for her day to day activities geared towards survival, growth and psychosocial development of the child.

iv. To ensure health & nutrition throughout the life time.

Lactating mothers should be:

- Educated on diet
  - ✓ Extra serving of starch based foods at each meal
  - ✓ Consume extra piece of fish/egg/dried fish, extra serving of pulses, vegetables and green leaves daily
  - ✓ Fat (oil, butter, margarine) 1 tea spoonful
  - ✓ Fruits : ½ ripedbananna / any fruit like wood apple, Nellie, mangoes that is locally available
- Give Ironfolate/ iron+ folic acid, Vitamin C and Calcium for a period of six months
- Provide Thriposha 2 packets
- Educate on importance of attending postpartum clinics
- Asses and support breast feeding
  - ✓ Special follow up of children born with Low Birth Weight

(Refer the section on nutrition in the postpartum guide)

Mothers who need close monitoring and evaluation

- ✓ Low pre pregnancy BMI (< 18.5kg/m2)
- ✓ Higher pre pregnancy BMI (≥25kg/m2)
- ✓ Multiple pregnancies
- ✓ Anaemic pregnant women
- ✓ Short interval pregnancies
- ✓ Teenage pregnancies
- ✓ Pregnant while lactation
- ✓ Pregnant women with various social problems such as economicallydeprived, single, unmarried, subject to domestic violence, displaced.
- ✓ Pregnant women with infections such as malaria, TB, intestinalinfections, STD, HIV
- ✓ Pregnant women with medical disorders like Type I & II Diabetes,gestational diabetes, PIH, Thalassemia.
  - ✓ Weight gain of < 1 kg/ month for women with normal BMI <0.5 Kgfor women who are overweight.
- ✓ Gain of more than 3 Kg per month for any pregnant women

Management of a pregnant woman with a BMI less than 18.5kg/m2 at first trimester or inadequate weight gain

- Measurement error has to be eliminated as a cause for inappropriate weight gain
- Take 24 hour dietary recall and assess adequacy of diet (calorie, protein and micronutrient)
- Assess dietary habits, food taboos, misconceptions and correct if there are any negative ones
- Nutrition counseling on appropriate diet:

    Help to modify diet by increasing amount of starch based foods such as rice, manioc, string hoppers etc at each meal

    Consuming 1-2 extra meals than other days

    Using 1-2 table spoonful of oil

    Including fish/dried fish/egg, pulses, vegetables and green leaves to daily diet

- Thriposha 2 packets monthly (to eat 50grams a day mixed with two teaspoons each of sugar and coconut). Assess the compliance
- Prevent anaemia (Refer the Genral circular No. 1945 on prevention of maternal anaemia page 100)
- Micronutrients (Iron folate, vitamin C and Calcium) daily after the 1st trimester.
- Give worm treatment.
- Assess the compliance of micronutrients and worm treatment.

- Assess and educate on factors other than dietary which could affect the maternal weight gain
- Assess the help to reduce the house hold work load and heavy manual work. Educate the husband and the family.
- Assess the mental support she possess and educate regarding the association between maternal mental relaxation and fetal well being
- Assess the exposure to house hold smoke and passive tobacco smoke
- Look for any other illnesses from which the mother suffers: eg; Urinary tract infections, parasitic infections, medical illnesses (Hypertension, DM). Refer to MOH where necessary.
- Improve the quality of antenatal care received by the mother.
- Follow up monthly
- If weight gain is inadequate, refer to MOH

Assessment and management of the nutritional status of overweight or obese pregnant women

1. Assess to modify dietary habit;

- Take 24 hour dietary recall and give necessary advice accordingly (to reduce starch, fats, & sugar).
- Assess dietary habits, myths and misconceptions. Correct if there are any.
- Educate regarding the expected weight gain.
- Follow the different dietary menus provided
- Attain high coverage of micronutrients

2. They should be explained the importance of regular exercise in weight management.

3. Following advantages of weight management should be explained to them.

- Reduces the risk of hypertension, preeclampsia, gestational diabetes,
- Reduces the risk of obstetric complications such as prolonged labour, and postpartum haemorrhage.

4. Over nourished mothers should be screened for gestational diabetes, pregnancy induced hypertension and fetal wellbeing.