

3. NUTRITION AND SOCIAL SCIENCES

3.1 Nutritional status of elderly rural population and development of appropriate intervention model using existing health system

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OBJECTIVES

1. Clinical assessment of the elderly population
2. To assess the anthropometric measurements of the elderly population
3. Assessment of micronutrient deficiencies *viz.* Iron, Zinc, Vitamin A and E, Calcium, Selenium, and lipid profile
4. Assessment of the dietary intake of the elderly population
5. To develop an intervention model using existing health system

PROGRESS:

Blood samples (venous blood 5 ml) were collected and biochemical assessment was done for Haemoglobin, Iron, Vitamin A, E, trace elements Zn, Se, Ca and lipid profile. Intervention/IEC was started after second phase training, from the month of September/October onwards following three approaches i.e.

1. Individual approach at household level: Each AW/ ASHA workers of the five AW centers of Luni village and one AW center of Dandiya village imparting the knowledge to all the elderly population at household level for three to five days in their respected area under the supervision of the research team monthly. All the AW workers have prepared the registers (six) mentioning the elderly registered in their respective area, at household level and imparting them IEC to them monthly at household level including young women also who are preparing the food. This intervention is going on.

2. Group approach: Lecture are taken at all six AW centers of Luni and Dandiya Village quarterly, at one place by the research team and PI and had group discussions with the elderly registered in

the study area along with local leaders of the study area invited for group discussion so as to do the effective dissemination of the knowledge at community level.

3. Mass approach: Educational printed material, in local language, in the form of pamphlets was distributed to all Aganwari workers and in the study area.

All the AWs/ ASHA workers are also motivating the elderly population registered in their area for getting them examined at CHC level monthly and get therapeutic supplementation for Iron, Zinc, Calcium, and Selenium etc. by Medical officer of CHC from the government supply as per the results of the biochemical analysis of blood.

Nutrition intervention is going on. Intervention coverage of monthly registered elderly subjects at household level ranges from 86 to 90 percent (Table 1).

Midterm survey was done for assessment of their knowledge at Household level from all the registered subjects and the AWs/ASHA workers of Luni and Dandiya Villages regarding the role of dietary fibres, Oils rich in MUFA & PUFA, Consumption of Iodized salt in daily diet of elderly population and their association with diseases, Micronutrient deficiencies and its prevention and dietary modification stressing the role of enhancers and inhibitors in diet along with the consumption of diet rich in micronutrients i.e. iron, calcium, zinc, Vitamin A and antioxidants which help in reduction of degenerative diseases etc., from July/August to October, 2015. Analysis of mid survey revealed that 86.5 percent knew about the sources of fiber i.e. wheat, bengal gram, green vegetables, bitter gourd, apple, guava etc., 75 percent knew that flour should be used with 'chokar' for chapatti preparation, whereas only 28.8 percent know that raw fruits should be preferred over fruit juices which increases the fibers in their diet. Only 34.4 percent knew that frequency of cereals in daily diet of elderly should be 4 to 5 times and pulses with bran should be used more (73.5%) and sources of Vitamin C (93.8%). Sprouted foods and porridge should be used as breakfast for elderly as revealed by 75 percent whereas 88.2 percent know that sunlight is a natural source of Vitamin D for elderly. It is revealed by 78.3 percent that calcium and vitamin D helps in strengthening the bones.

Regarding the consumption of fat, 52.3 percent revealed that 10 to 20 ml/day should be consumed by elderly in their diet whereas 78.5 percent revealed that reuse of oil again and again increase the level of cholesterol. Only 43.5 percent knew that oil should be changed once in three months in the diet for elderly. 71.2 percent revealed that olive oil / kardi oil / rice bran oils should be consumed more which has less fat. whereas 28.2 percent revealed that combination of 2 to 3 oils should be used. It is revealed by 44.1 percent that white part of egg should be consumed by elderly instead of yellow part.

Regarding the consumption of milk and milk products per day in the diet of elderly, 69.1 percent knew that 300 ml should be consumed per day which helps in strengthening the bones. Only 21.6 percent revealed that calcium rich foods were milk/curd/cheese and these products should be given to elderly without fat. It is revealed by 82.3 percent that diabetic elderly should not eat fruits viz. Banana, mango, Grapes and Sapota which are rich in sugar whereas 72 percent knew that diabetic should not consume cold drinks/ jally/ jam/ chocolates etc in their diet.

It was revealed by 82.1 percent that elderly should take more water per hour so as to save the risk of urine infection and constipation. 83.2 percent revealed that fibrous foods should be consumed more by elderly which helps in reduction of constipation. Consumption of salt in the diet of elderly suffering from disease of high blood pressure and cardiac disease should be less (less than 5 gm/day) in their diet as revealed by 82.1 percent.

The gap between consumption of tea/coffee/milk and meal should be around 2 hours as revealed by 59.4 percent. Starch of rice should be discarded in the diet of elderly as revealed by 64.1 percent.

Only 5 percent knew that elderly should go for daily walk for period of 20 to 60 minutes whereas 26.2 percent revealed that elderly should walk for period of 20 to 40 minutes daily. 88.5 percent knew the benefits of light exercise and yoga for maintenance of good health of elderly. Elderly persons should not smoke/ chew tobacco/opium was revealed by 83.8 percent.

After intervention of nine months, all the registered subjects will again be examined for all the parameters as done in the beginning of the study. The results of all the parameters will be compared for assessing the impact of the intervention, in terms, IEC (nutritional counselling) and therapeutic supplementation to all elderly enrolled in the study area.

Outcome: The assessment of the nutritional status of the elderly is a pre-requisite for the developing appropriate strategies and programs for the elderly. The results of nutrition intervention will help in addressing the issues on malnutrition, micronutrient deficiencies and morbidities among the elderly population using the existing health system i.e. the facility of PHC/CHC level. This will help health functionaries in management and reduction of the above mentioned diseases in elderly population.

Table 1. Monthly Intervention coverage of registered elderly at household level

Month	No	%	Death	%	Non response	%	Not available	%	Total
April, 2015	349	88.2	-	-	24	6.0	23	5.8	396
May, 2015	350	88.4	-	-	24	6.0	22	5.6	396
June, 2015	347	87.8	3	0.8	24	6.0	22	5.6	396
July/August - October, 2015 6 1.5 Mid Survey 393									
Nov., 2015	337	87.3	1	0.2	24	6.2	24	6.2	386
Dec., 2015	335	87.0	1	0.2	24	6.2	25	6.5	385
January, 2016	333	86.7	2	0.5	24	6.2	25	6.5	384
Feb., 2016	330	86.4	2	0.5	24	6.2	26	6.8	382
March, 2016	329	86.6	1	0.3	24	6.3	26	6.8	380

Total Deaths = 16-