

## Cogent Manifestation of Nutri-Mix Powder to Heavy Working Mothers to Scuffle with Undernourishment

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### ABSTRACT

Undernourishment among heavy working mothers is very common in India. An undernourished mother faces so many health problems which generally includes anemia, infectious diseases, lower immune response, decreased wound healing, menstrual issues, increased rate of mortality and morbidity decreased convalescence and hence to reduce the possibilities of undernutrition. The present study was undertaken to formulate and develop cereal and millet based Nutri-mix powder to heavy working women to affray with menstrual losses and undernourishment. Among with the supplementation the study focusses on effective demonstration of multiple sample menus. The nutritional status of the heavy working subjects which includes anthropometry, biochemical, clinical dietary, REAP, frequency consumption of common foods, of the selected subjects were assessed and observed. The combination of cereals and millets were collected randomly. The questionnaire which comprised of 30 questions was mounted to assess the nutritional knowledge attitude and practice (KAP) of the selected subjects. Nutrition education was given by using cogent substantiation and charts. Before and after evaluation of KAP of the subjects were done by using questionnaire to assess the progress of the subjects. The improvement of the selected subjects was measured (98.3%). Scores obtained from pretest was increased (53.3 %) significantly after the nutrition education of the subjects.

**KEY WORDS:** FORMULATION, DEVELOPMENT, DEMONSTRATION, NUTRITION EDUCATION, IMPACT ASSESSMENT.

### INTRODUCTION

Woman is an integral part of the society, traditionally; Indian women had been home makers. In late decades, with the spread of education and better awareness, along with increasing cost of living, women have shifted from home to career. India has provided a stage for growth and development for women. Inadequate and improper

utilization of health facilities and wide spread anemia among all the reproductive age women, leading to high maternal mortality. Poor health has repercussions not only for women but also their families. Women with poor health and nutrition are more likely to give birth to low weight infants. Finally, a women's health affects the household economic wellbeing, and as a women with poor health will be less productive in the labor force. While malnutrition is prevalent among all segments of the population, poor nutrition among women begins infancy and continues throughout their lifetime. Because of prevailing culture and traditional practices in India, the health and nutritional status of women becoming worse effected. Earlier, attempts have been made to assess the diet and nutrition profile of women in rural and tribal areas of certain States in India, (Fan et al., , 2017, Abishek and Gayatri 2018, Caroline et al., 2020).

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Nutritional Status of heavy Working Women's the major challenge today before women working is to overcome the resource limitation that deliver them to low levels of productivity and wellbeing (Majied and Sadiqa 2015). For heavy working mother energy has given about 2850 kcal/kg body weight for their needs. While women's role in the food chain is essential to produce most important resource, food which paradoxically does not guarantee women even minimum levels of nutrition, (Rao et al., 2019).

Malnutrition adversely affects women's participation in the economic system and their productivity. To break this fierce paradox it is important to focus simultaneously on women's nutrition-related roles and their nutritional status ( Mathur, et al., 2015). Nutri-mix is a type of instant food which can be used as supplementation for providing considerable amount of vitamins and minerals in a daily basis, (Srivastava, et al., 2019). Supplementation of fatty acids (omega3) reduces the premature birth, (Seymour et al., 2020 Daniel and Bremer (2020).

The present research focusses on analyzing the nutritional status of the heavy working mother; to formulate and develop nutri-mix powder; to substantiate the developed sample menus along with the product; and to evaluate the progression on the nutritional knowledge of the selected heavy working mothers. The present findings are based on the data available with National Nutrition Monitoring Bureau (NNMB) collected during 1998-99 and 2005-06 on tribal and rural population respectively.

## MATERIAL AND METHODS

Seventy-five women with menstrual complication and malnutrition were selected for investigation. The subjects were around the age range of 25 to 60 years. Nutritional assessment method includes Anthropometric measurement, biochemical profile, clinical assessment, dietary profile, the frequency of food consumption, Rapid Eating Assessment of the Patients (REAP). To study the status on under nutrition and menstrual complication questionnaires (50) related to the food eating habits, health issues and nutritional assessment of Knowledge Attitude and Practical questions were collected and requested to respond and graded with one mark for each questions and documented; to compensate the menstrual losses and undernourishment cereals and millets were collected randomly with different proportion and it was processed as nutri - mix powder to enhance the energy value with the help of India Food Composition Table by NIN, (Longvah et al., 2017).

Different kinds of menu were framed by combining high nutrient compact foods. The investigator suggested the nutri-mix powder and the sample menus to balance the nutritional status. The selected cereals and millets were given in Figure I. The formulated nutri mix powder was substantiated for their preparation method and selection of choice based ingredients to prepare on their own in home level. The investigator also prepared one day menu

which comprised with the combination of high nutrient dens food and it was demonstrated to the subjects. The importance of high nutrient compact foods and the RDA was educated. The role of food in balancing the under nutrition and menstrual complication has been explained to the subjects to integrate effective self-management and also to improve the nutritional knowledge and self-confidence. The nutrition education was given in the form of demonstration of one day sample menu by oral and charts.

## RESULTS AND DISCUSSION

Table 1. Proportion of Nutri-Mix Powder

Ingredients	Grams
Green Gram	100
Thinai	50
Black Gram	50
Horse Gram	50
Rice	100
Roasted Gram Dal	50
Wheat	100
Ragi Flour	200
Cardamon	5
Dry Ginger Powder	1 Piece

Table 2. Comparative Nutritive Value of Sample Menu

S.No	Nutrients	Nutritive Value Of Sample Menu/ Day	RDA* (For Heavy Working Women)/ Day
1	Energy (k.calories)	2950.57	2850
2	Protein (g)	64.07	55
3	Carbohydrate (g)	454.13	427
4	Fat (g)	19.58	30
5	Fibre (g)	59.71	38
6	Calcium (g)	1005.11	600
7	Iron (g)	28	21
RDA* (Srilakshmi 2014)			

The above table describes the ingredient proportions used for the preparations of Nutri-Mix Powder. Providing nutri-mix as supplementation using local food ingredients which have minimum processing is one of the best way to reduce undernourishment (Agashe, and Ghugre 2019).

Table III reveals the status of body mass index which expresses 35% of the subjects were underweight where they needs nutritional support for their improvement of health lack of healthy dietary habits were determined

as major reasons of anemia, (Stiller et al., 2020). Poor nutritional intake during the period of pregnancy and lactation results to vulnerable in infections (Raiten et al., 2020).

Table 3. BMI Distribution of the Subjects

S.No	BMI	Status	Nos	Percentage %
1	<18.5	Under weight	26	35
2	18.5-24.9	Normal	43	57
3	24.9-29.9	Overweight	4	5
4	30 and above	Obese	2	3
		TOTAL	75	100

Table 4. Shows the considerable increase in the knowledge of the selected subjects which evident that nutritional education with effective demonstration and suggestions might increases the quality of life of women. Progressed intervention programmes and nutrition education might results in good Improvement in the nutritional status of the subjects.( Bredbenner et al., 2017)

S.no	Tests	Scores	Percentage %	T value	P value
1	Pre-test	16	53.3		
2	Post-test	29.5	98.3	1.6657	9.87-36
3	Gain in scores	13.5	45		

## CONCLUSION

Heavy working women are facing so much of physical stress and health issues like menstrual losses and undernourishment which is highly prevalent in India. Conducting programmes in relation with awareness and education can helps the women to improve the nutritional status and balance the regular diet. The utilization of local and antioxidants foods supports the healthy life of women.

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