DIETARY INTERVENTION FOR MANAGEMENT OF OBESITY AMONG RURAL FARM WOMEN

K. Geetha, Geetha M. Yankanchi and Netravati Hiremath

All India Coordinated Research Project (AICRP) on Food and Nutrition

University of Agricultural Sciences, GKVK, Bangalore, India

1. Introduction

Obesity and related co-morbidities are major health problems throughout the world. In India, the increased prevalence of obesity is primarily associated with the transformation from rural to urban lifestyle. Dietary approaches for weight loss have gained widespread interest and considerable importance. Dietary fibre being one of the essential component of the diet has important physiological and metabolic role in reducing body weight. Hence, the present study was under taken to develop high fibre food mix and assess its efficacy on obese subjects.

2. Objective

To assess the efficacy of millet based high fibre food mix on obese subjects.

3. Methodology

- **Food mix was developed using region specific high fibre food ingredients.**
- **The efficacy of food mix was assessed through dietary intervention.**
- **Intervention was carried out on obese rural farm women for a period of 120 days by providing 1/3 rd daily requirement of protein and energy through developed food mix.**
- **Impact of food mix was evaluated by assessing anthropometric and biochemical parameters at pre and post dietary intervention.**

4. Results

- **The developed mix contained 15.80±0.32g of protein, 2.6±0.12g fat, 320 kcal energy, 60.75g carbohydrate and 29.5±0.91g of dietary fibre per 100 g of the mix(table-1).**
- **Significant reduction in weight (65.34±10.97 kg to 63.23±10.60 kg), Body mass index (27.84±4.14 to 26.95±4.06) and hip circumference (105.23±9.96 cm to 104.93±9.90 cm) from pre to post intervention (P≤0.05) period was observed(table-2) in experimental group.**
- **Cholesterol, low density lipoprotein and fasting blood sugar was significantly reduced in experimental group from pre to post test(Fig 1&2).**

Table1. Nutrient composition of high fibre food mix

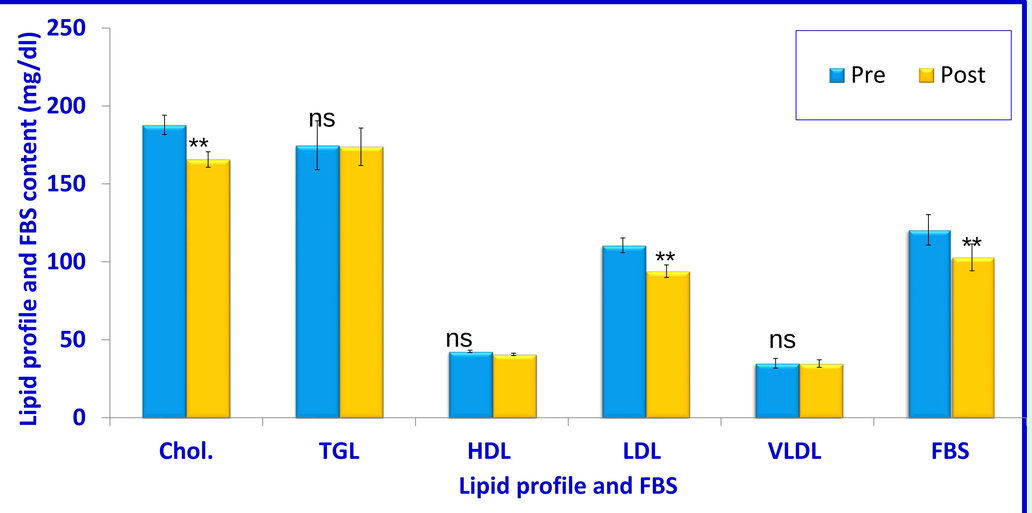
Nutrients(100g)	Quantity(Mean±SD)
Moisture (g)	9.10±0.07
Protein (g)	15.00±0.32
Fat (g)	2.60±0.12
Total Carbohydrates (g)*	60.75
Energy (k cal)*	320
Ash (g)	3.40±0.18
Crude fibre (g)	9.11±0.83
Dietary fiber (g)	29.50±0.91
Iron (mg)	8.33±0.12
Calcium(mg)	366±0.08

*: Calculated values

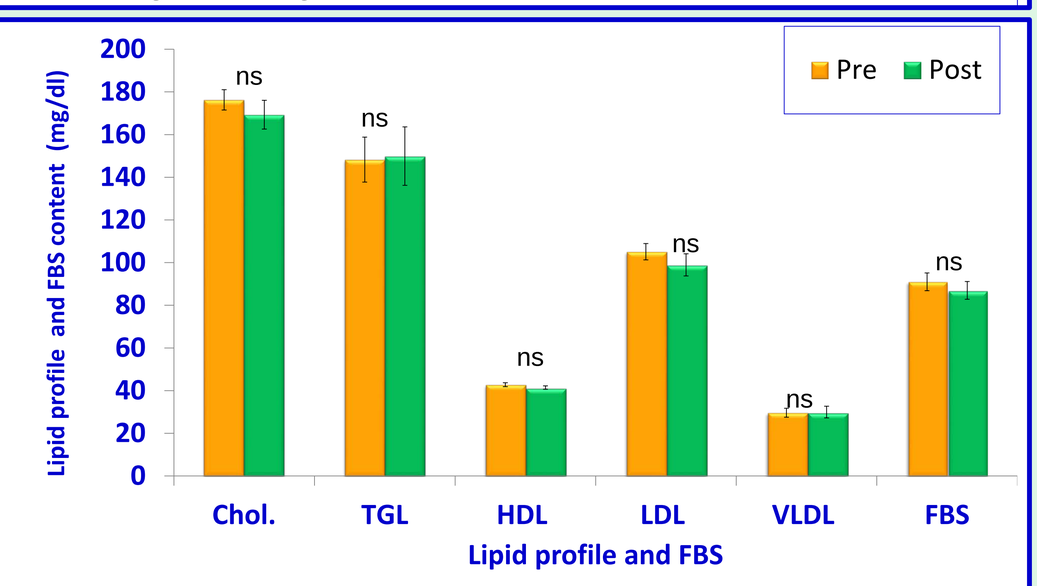
Table 2. Effect of high fibre mix on anthropometric parameters

Anthropometric measurements	Experimental group(n=30)			Control group(n=30)		
	Pre (mean ±SD)	Post (mean ±SD)	't' value	Pre (mean ±SD)	Post (mean ±SD)	't' value
Height (cm)	153.07 ±4.53	-	-	153.03 ±6.57	-	-
Weight (Kg)	65.34 ±10.97	63.23 ± 10.60	10.56**	62.30 ±9.13	63.09 ±9.23	-3.34 ^{ns}
BMI	27.84 ± 4.14	26.95 ± 4.06	11.27**	26.57 ±3.30	26.91 ±3.29	-3.41^{ns}
WC(cm)	88.43 ±9.57	88.20 ±9.50	1.36^{ns}	87.06 ±9.02	87.63 ±9.42	-3.32^{ns}
HC (cm)	105.23 ±9.96	104.93 ±9.90	2.52*	104.46 ±6.70	105.00 ±6.78	-4.0 ^{ns}
WHR	0.84 ±0.05	0.84 ±0.05	0.10 ^{ns}	0.88 ±0.10	0.88 ±0.11	-0.52^{ns}

Note-WC: Waist Circumference, HC: Hip Circumference, WHR: Waist to Hip Ratio



Note-Chol:Cholesterol, TGL: Triglyceride, HDL: Hiigh Density Lipoprotein, LDL:Low Density Lipoprotein, VLDL: Very Low Density Lipoprotein and FBS: Fasting Blood Sugar



Note: Chol: Cholesterol, TGL: Triglyceride, HDL: Hiigh Density Lipoprotein, LDL: Low Density Lipoprotein, VLDL: Very Low Density Lipoprotein and FBS: Fasting Blood Sugar

Fig 2. Lipid profile and FBS (Control group, n=30)

5. Conclusion

The food based dietary intervention with high protein and dietary fibre showed reduction in body weight and biochemical parameters. Inclusion of high fibre food mix in daily diet helps in management of weight and lipid profile.