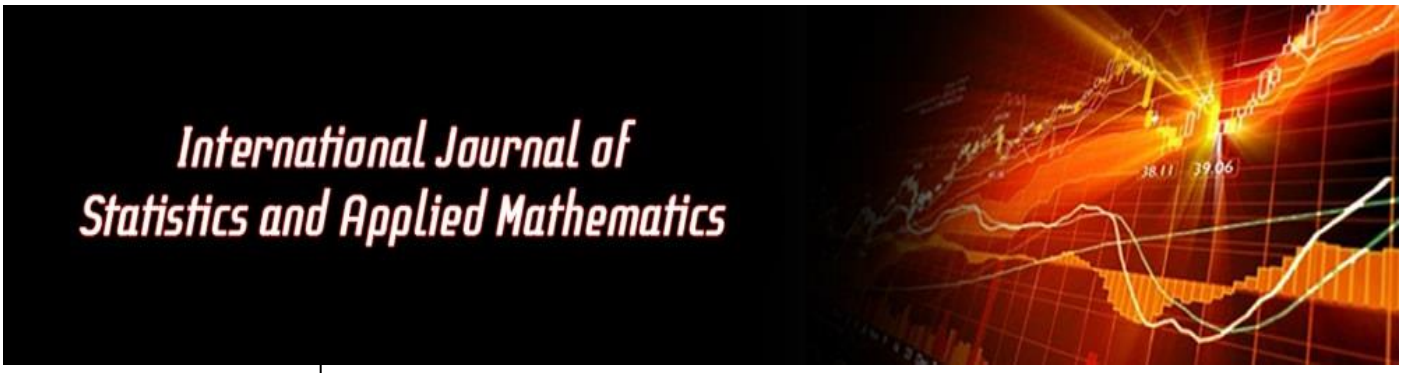

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Assessment of nutritious health drink for the health improvement of lactating farm women from the village Nawagao Bilaspur Districts

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Abstract
During the lactation period, mothers are at an increased risk of nutritional deficiencies due to improper dietary patterns, physiological changes, and various socio-demographic factors. The present study aimed to examine the nutritional status, dietary intake, and related factors among lactating women in the urban and rural areas of Nawagao District of Bilaspur state of Chhattisgarh India Methodology is the random selection Comparative study was conducted under the On Farm Trail through Krishi vigyan Kendra Bilaspur and Women and Child Devlopement Department during April-July 2022-23. The study population included 20 lactating mothers who were referred to the Aanganwadi Center Nawagao a multi-stage sampling method was used to recruit the participants. We were giving Developed Health Drink for lactating Women and Evaluate Anthropometric Measurement nutritional status and food intake of the participants were assessed over three days using the 24-hour dietary recall (24HDR) and dietary record (DR) questionnaires. The data were analyzed using Simple software by MS Office. The mean age and body mass index (BMI) of the mothers were 15.9 to 17.8 and age was being 19 to 26 years respectively. There was a significant difference in calorie intake between the different categories of age, BMI, education level, job status and lactation stage The energy and nutrient intakes, except iron, were statistically lower (p<0.05) than the prescribed Recommended Dietary Allowances (RDA). The intake of vitamins B12, and Vitamin C rich Food, protein, iodine Suggested to mother through Awareness program in anganwadi of the area. Lactating women in the Nawagao rural areas of had a poor nutritional status. Nutrition education and a modified dietary supplement given during the lactation period are recommended and evaluate to anthropometric measurement and biochemical hemoglobin estimation in small sample size in village nawagao also given to upliftment of their health status

Keywords: Lactation, breastfeeding, nutritional status, dietary records

Introduction
Breastfeeding is considered the ideal method to provide newborns and infants with energy and nutrients for optimal growth, development, and good health [1]. A study among lactating women has shown that a healthy diet has both short- and long-term beneficial health effects for both mothers and children [2]. Especially during the lactation period, mothers are at an increased risk of nutritional deficiencies due to improper dietary patterns, physiological changes, and various socio-demographic factors [3]. A recent study Trail that the Developed Health Drink For malnourished Lactating Women serving per 100gram Contain Energy, Protein Fat and Calcium in very rich amount and we aware about vitamins B_1, B_2, B_6, B_12, A, and D; iodine, and essential fatty acids are important nutrients for an optimal level of breast milk production through Awareness program [4]. Long term insufficient caloric intake can also affect the quality and quantity of breast milk; resulting in malnutrition of the infants [5]. The nutritional status of women and children is a good indicator of the overall well-being of a society and reflects the household food security status, general health, and social conditions [6]. Therefore, it is vital to continuously monitor dietary intake and the nutritional status of lactating mothers, particularly in resource-poor settings [7]. Few studies have addressed the dietary intake of lactating women in Iran [8, 12]. Two studies have reported that the calorie intake of lactating mothers in the northern provinces of Iran (Mazandaran and

Khorramabad reported an adequate intake of energy and macronutrients by lactating mothers; however, a lack of certain micronutrients (calcium, iodine, magnesium, phosphorus, and zinc; the vitamins A, D, B_2, B_9, and C) was observed [10]. The majority of the reported studies have solely focused on prenatal nutrition, but the nutritional status of lactating women has been overlooked [13]. Studies in our thematic area have also reported improper nutritional patterns and nutrient deficiencies among lactating women [2, 14, 15]. Further research on this topic was considered necessary because of the importance of a sufficient dietary intake during lactation, limited studies in the literature, discrepancy in the findings of various studies, As a direct result, the present study aimed to examine the Anthropometric Measurement nutritional status, dietary intake, and related factors among lactating women in the rural areas of Nawagao Bilaspur Chhattisgarh We believe that the outcome of the present study would significantly contribute to the design of State dietary guidelines for lactating women.

Material and Methods

The present Trail-based study was conducted in Nawagao anganwadi Kendra, Bilaspur Chhattisgarh. The study population included 20 malnourished lactating mothers who were referred to some health centers in Anganwadi Kendra Nawagao during April-July 2012. A multi-stage sampling method was used to recruit the participants. First, based on the Random sampling method was divided into two categories, namely Age group 16 to 18 and second is 20 to 27. Then, second Phase Hemoglobin Estimation (health centers and community centers) was random systematic sampling. The inclusion criteria were lactating women 16 years or higher, lactation period of 12 months or less, and willingness to participate. The exclusion criteria were suffering from severe Underweight women were assessed for eligibility, out of which n=20 individuals met the above-mentioned criteria. A general questionnaire was used to obtain the socio-demographic characteristics, clinical data, current medication, and the breastfeeding routine of the participants. We extracted the information through individual face-to-face interviews with the lactating women. The height of the participants was measured to the nearest 0.1 cm with a standard measuring tape, and the weight was recorded to the nearest 0.1 kg using a digital weighing scale placed on a firm and flat surface. To ensure accuracy, the scale was calibrated daily using a standard 20 kg weight and the participants were requested to wear lightweight clothing and no shoes. The body mass index (BMI) was calculated by squaring the height in meters and then dividing the weight by height in meters squared (kg/m^2)

The nutritional status and food intake of the participants were assessed using the 24-hour dietary recall (24HDR) and dietary record (DR) questionnaires over three days (two weekdays and one weekend day. We administered the questionnaires and the participants were asked to recall and report all the foods, beverages, and dietary supplements consumed over the previous 24 hours. A manual for household measures was used to convert the amount of consumed food to the daily intake in grams [17]. In developed Health drink Contain energy, protein, Fat, calcium are calculated simple method through NIN 2010 (C. gopalan) content foods were computed using the find out The data were analyzed using simple calculating method The descriptive data were expressed as frequency distribution. Hemoglobin in lactating women was also measuring through heath department in anganwadi Kendra. In Health drink given three Days in a week for three month. We also make a food supplement (Health Drink) and packaging in Krishi Vigyan Kendra laboratory under Home Science Department. We were also comparing to any types of another health Drink they were Consume at their Daily consumption.

Results and discussion

Socio-demographic characteristics of the Participants are shown in Table 1. The mean age of the participants was 29.78±6.24 years and 399 (56.36%) of them fell in the 25-35 years category. The mean weight, height, and BMI of the participants were 68.86±10.05 kg, 162.40±6.13 cm and 26.11±3.70 kg/m^2, respectively.

Table 1: Socio-Demographic Characteristics of The Participants before supplementation

Variables Frequency (in number)		
Age (years)	16-18	2
	18-21	5
	21-27	13
Education	Non /primary	2
	Middle	6
	High school	11
	Gradation	1
No. 0f Children	<4	8
	>4	12
BMI kg/m^2	<15.9	3
	16.0-16.9	11
	17.0-18.4	5
	18.5-24.9	0

The socio-demographic characteristics of the participants are shown in Table 1. The mean age of the participants was 18 to 27 years and. The mean weight, height, and BMI of the participants were no of participant of <15.9, 16. 0-16.9 17.0-18.4, and18.5-24.9 0 respectively. Their education level is number of 2 are primary educate, 6 are middles schooling, 11 of high school and 1 were be graduate.

Table 2: Nutrition analysis of health drink for lactating women

Ingredients contain 100 gm health drink	Energy	Carbohydrate (gm)	Protein (gm)	Fat(gm)	Iron (mg)	Calcium (mg)
Sattu powder(40 gm)	128	18.4	8.8	2.12	-	-
White sesame powder(10gm)	63.1	1.17	2.05	6.12	1.64	6
Soya bean powder(10gm)	37.74	1.02	3.78	1.94	1	19.5
Peanut powder(10gm)	57	2.67	2.62	3.98	.31	7.7
Milk powder(10gm)	37.5	5.42	3.33	0	0	129.2
Mushroom powder(10gm)	2.4	.32	3.88	.32	0	0
Roosted flex seed powder(5gm)	22.19	.55	.93	1.78	.27	12.85
Jegry (5gm)	17.69	4.24	.09	.01	.23	0
TOTAL	**365.62**	**33.79**	**25.48**	**16.27**	**4.27**	**163**

Table no 2 shown as prepared health drink contain made in Krishi Vigyan Kendra laboratory under Home science Department in Bilaspur with the help of well hygienic and well equipment's like measuring cylinder, measuring spoons, mixer jar, zip pouch, labeling stickers and high quality branded food stuff and many equipments, ingredients of health drinks in 100 gram health drink contain 40 gram sattu powder, 10 gram white sesame powder, 10 gram peanut powder,10 gram Milk powder, 10 gram Mushroom powder, 5 gram Roasted Flex seed and 5 gram jeggry powder. nutrition contain were calculated by NIN (c.gopalan)2010.In 100 gram health drink contain 365.62 gram Energy,33.79gram Carbohydrate, 25.48 gram Protein, 16.27 Fat, 4.27 mg Iron, 163 mg calcium.

Result

Table 1: Nutrition sensitive of OFT

Detail of Technology	Name of Product/enterprise	Per capita Consumption gm/ day	Nutrient Intake (Unit)				Anthropometric measurements					
			Energy (kcal)	Protein (gm)	Iron (mg)	Calcium (mg)	Increase in Weight (Kg)			Increase in HB (m)		
							Before treatment	After treatment	% change	Before treatment	After treatment	% change
T_1(Farmers Practices)	Not practiced any type of health Drink	0	0	0	0	0	40	41	0	9.1	9.1	2.6%
T_2 (Recommended Practices)	Prepared Per 100 gm health drink contains 50 gm *sattu* 10 gm soya , 10 gm peanut 10 mushroom p, 10gm glucose powder, 5 gm roasted flex seed,5gm milk powder	**50 gm/day**	**147**	**4 gm**	**.4 mg**	**25.8**	**40**	**42**	**7.14**	**9.1**	**9.5**	**5%**

Table no 3 shown as T1 indicate which farm women not practice any type of health drink During their lactation periods so their food consumption pattern and Nutrition Calculation were not recorded rather than T2 indicate after notorious health drink supplementation their Nutrition calculation were energy 147 gm/day, Protien4gm/day, iron0.4 mg/day and calcium was 25.8mg/day consumption calculating by food consumption pattern after three months of supplementation BMI changes in 7.14% and Hemoglobin were 5% increase.

Conclusion

Dietary patterns and Health Drink were analysis and identified in the present ON Farm Trail for lactating Farm mothers. Irrespective of the pattern, many nutrients were inadequately consumed when compared with the previous eating pattern of lactating mothers. all types of Variable like Anthropometric and Dietary Data were improve their weight and hemoglobin level, review of health drink acceptance are testy and healthy lactating women are so like this products their weight are increase average1 to 1.5 kg and hemoglobin 3 to 4 gram in three month of trail periods. Based on these

results, nutritional recommendations for lactating women need to take the current low intake of foliate, vitamin C, vitamin A, vitamin D and iodine into account. Furthermore, education should be provided to improve nutrient density by optimal food choices as well as higher adherence to healthy dietary patterns, and in cases where dietary modification alone may not be sufficient, considering fortification and supplementation. This information could provide perspectives on informing interventions that will enable the improvement of the nutritional status of lactating women. More research is required to actually link nutrient intake in lactating mothers to Human Milk nutrient levels, infant nutrient status and growth and developmental outcomes.

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