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Dietary Habits & Mineral Intake amongst Farm Women

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Abstract
Farm work is known as laborious work, which is the origin of health problems as major health issue especially amongst women. It may lead to the prevalence of osteoporosis resulting in bone density loss. Hence, the prevention of bone loss is desirable on medical and economic ground. The bone metabolism, a great deal of attention focuses on the benefits of calcium, vitamin, magnesium, vit K, fruits & vegetable and the sources of these nutrients. The farm environment diet and the recommendations on it for hard work are rarely taken care. The frequent consumption of staple food like rice, bread, wheat food and dal may not provide the desired level of the nutrients & minerals. The bone mineral contains are the key minerals for body weight, body height, physical activity level to minimize the risk of bone fracture. The present study is an attempt made in thesis direction to focus on the mineral status of farm women with the following objectives.
To study the dietary pattern of farm women in relation to mineral intake.
To compare the actual mineral intake with WHO & ICMR 2024 daily standards.
The data collected from 50 respondent farm women from Akot tehsil 3 villages were selected for the study. The data collected was for the Kharif season of 2025-2026.
Farm women are hardly meeting their nutrient and mineral requirements.
Farm women diet is deficit in Potassium, Magnesium and Sodium.
Hypothesis stated are accepted.

Keywords: Farm Women, Dietary Habits, Dietary Pattern, Mineral Intake.

Introduction

Farm work is known as laborious work, which is the origin of health problems as major health issue especially amongst women. It may lead to the prevalence of osteoporosis resulting in bone density loss. Hence, the prevention of bone loss is desirable on medical and economic ground. The bone metabolism, a great deal of attention focuses on the benefits of calcium, vitamin, magnesium, vit K, fruits & vegetable and the sources of these nutrients. The beneficial effect of consuming fruits & vegetable have been hypothesized with regards to diet as a most common approach. The examination of single nutrient may not be adequately accountable as such, the dietary pattern that is measurement of overall diet has been widely used to elucidate the relation between diet & disease for developing appropriate recommendation for overall dietary habits to prevent undesirable condition. The farm environment diet and the recommendations on it for hard work are rarely taken care. The frequent consumption of staple food like rice, bread, wheat food and dal may not provide the desired level of the nutrients & minerals. The data on nutritional survey for farm women's indicates that the intake of food & beverages of energy items used by farm women's and their composition is hardly meeting their nutrient requirement. Stretching of need of categorising food items into the two group as the general food items & the specific food items who will meet their nutrient requirement to maintain bone mineral mass and bone density. The bone mineral contains are the key minerals for body weight, body height, physical activity level to minimize the risk of bone fracture. The present study is an attempt made in thesis direction to focus on the mineral status of farm women with the following objectives.

Objectives

1. To study the dietary pattern of farm women in relation to mineral intake.
2. To compare the actual mineral intake with WHO & ICMR 2024 daily standards.

Review of Literature

1. Okubo Hitomi *et al* 2006- Studied the dietary pattern & bone minerals density amongst the Japanese farm women. The study based on a sample 291 farm women between the age of 40-55 years. Bone mineral density was measured the dietary pattern were classified on the basis of food groups as healthy with high intake of green & dark yellow vegetables western pattern with high fat & meat intake. Japanese traditional meal pattern and processed meat & beverages.
2. The findings concludes that dietary pattern of high intake of fish, fruits and vegetables and with low intake of meat was found to be beneficial in maintaining bone mineral density.
3. Cathi Dennehy Candy Tsourounis 2010 Vitamin A, the B vitamins, Vit C, calcium, Vit D, vitamin E, Vit K, magnesium, selenium, and zinc were selected. All vitamins, minerals and trace elements played significant role in maintaining nutritional status and health wellbeing among the farm women dietary intake of essential supplements be considered for body metabolism. The intake vit C, D & calcium was recommended for bone health maintenance.

Methodology

The present study on dietary intake & average mineral intake was based on the data collected from 50 respondent farm women from Akot tehsil 3 villages were selected for the study. The data collected was for the Kharif season of 2025-2026.

Hypothesis

1. The dietary intake of respondent farm women is below their nutrient & mineral requirement.
2. The average mineral intake of respondent farm women is not as per WHO & ICMR recommendations.

Result & Discussion

The data on dietary intake of 50 respondent farm women from Akot tehsil was analysed for daily intake of food items in average quantity & presented in the following Table – 1.

Table 1: Daily intake of food items along with average mineral intake.

Time	Quantity	Diet	Average Minerals Intake
1) Morning	1 cup 2	Tea biscuits	Potassium-1900-2100 mg
2) Breakfast	1 bowl	Poha	Sodium-1400-1700 mg
3) Lunch	3 1 bowl 1 bowl 1 bowl	Chapattis Dal Rice Veg-curry	Magnesium-200-220 mg
Afternoon 4pm	1 cup	Tea	Zinc-6.5-7 mg
Dinner	2 2 bowls 1 bowl	Chapattis Rice Veg-curry	Phosphorous-400-450 mg

Ongoing through the table 1, it is observed that almost all farmwomen are the tea consumed with biscuits identical consumable items available in house. The breakfast includes the consumption of poha, upma likewise items within the limitation of 1 bowl were consumed in breakfast. In lunch about 3 chapati's with dal, rice & vegetables, 1 bowl each were preferred. 1 cup evening tea & 2 chapati or bhakri with rice of vegetable during night.

The analysis of diet taken indicated that the consumption of potassium was 1900-2100 mg per day, Sodium 1400-1700 mg, Magnesium 220-220 mg, Zinc 6.5 to 7 mg, Phosphorus 400-450 mg indicating respondents farm women are hardly meeting their nutrient requirement.

The following table presents the daily average mineral intake by respondent farm women compared with ICMR & WHO 2024 standards.

Table 2: The daily average mineral intake along with standards

	Potassium	Magnesium	Zinc	Sodium	Phosphorous
Mean	2643.486	271.0114	7.142857	1592.8	659.2286
S.D	248.0862	17.19876	3.58	120.268	44.94081
S.E	35.08999	2.43264	0.51	17.01103	6.35655
ICMR	4700	300	8	2000	700
WHO	3510	300	8	2000	700
Z value ICMR 2024	8.289513**	1.685503*	0.239425	3.385772**	0.907225
Z value WHO 2024	3.492795**	1.685503*	0.239425	3.385772**	0.907225

The Z values indicated that the zinc and phosphorous intake was at par with the ICMR & WHO standards while potassium, magnesium, & sodium intake was significantly lower in comparison with ICMR & WHO 2024, concluding respondent farm women diet is significantly deficit in potassium, magnesium & sodium needs to be improved for body health, nutrition & bone density. In light of findings from the above two tables, Hypothesis are accepted.

Conclusions:

1. Farm women are hardly meeting their nutrient and mineral requirements.
2. Farm women diet is deficit in Potassium, Magnesium and Sodium.
3. Hypothesis stated are accepted.

The study highlights a critical nutritional deficit among farm women in the Akot tehsil, whose arduous physical labor puts them at high risk for osteoporosis and bone density loss. Findings reveal that the current dietary pattern-heavily reliant on staples like rice, wheat, and tea-fails to meet essential mineral requirements. While Zinc and Phosphorus levels were found to be at par with ICMR and WHO 2024 standards, there is a significant and concerning deficiency in Potassium, Magnesium, and Sodium.

The acceptance of both hypotheses confirms that the traditional diet during the Kharif season is insufficient to sustain the physiological demands of heavy farm work. To mitigate long-term health risks and economic burdens associated with bone fractures, there is an urgent need to shift from general food staples to nutrient-dense diets.

Incorporating more fruits, vegetables, and mineral-rich supplements is essential to bridge the gap between actual intake and international health standards.

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