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Comparative study of nutrition status of working and non-working pregnant women in Bhandara District

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Abstract
Pregnancy is a period of morphological, anatomical and physiological changes that is accompanied by high nutritional demands. The nutritional status of the mother during pregnancy is believed to influence not only the course of pregnancy but also the nutritional status of the new born. The present study was carried out to compeered the nutritional status of working and non-working pregnant women in Bhandara district. The sample selection of 200 from working and 200 from non-working total 400 pregnant women has been selected for Purposive Sampling Method. Parameters used for the study were survey and predesigned structured questionnaire for assessment of nutritional status, anthropometric measurements for Height, weight and BMI, assessment of dietary intake, Biochemical assessment for hemoglobin. Data was analyzed using SPSS software and was tabulated statistically using percent, t-test, z-test was applied. The results conclude that Quantities of all food groups consumed by working and non-working pregnant women were significantly (P<0.01) lower than the recommended levels. Quantities of all nutrients consumed by working and non-working pregnant women were significantly (P<0.01) lower than the recommended levels. There is a significant difference in the means of height and weight in the working and non-working pregnant women. Majority (68.5%) and (46.5%) of both the working and non-working pregnant women were in the category of normal BMI, respectively. There is a significant difference in the means of hemoglobin in the working and no-working pregnant women.

Keywords: Nutrition status, working and non-working, pregnant women

Introduction
Pregnancy is the period in the life of an adult woman for about nine months when the fetus i.e. the unborn baby grows inside her body. To support the growth of the fetus, certain physiological changes take all the nutrients required for its growth from the mother's baby by the placenta. Hence, pregnancy is a period of morphological, anatomical and physiological changes that is accompanied by high nutritional demands.

According to Robinson, W. D. (1966) [6], "Nutrition is the science of foods, the nutrients and other substances therein; their action, interaction and balance in relationship to health and diseases and care, absorb transports and utilizes nutrients and disposal of their end products. In addition, nutrition must be concerned with social, economical, cultural and psychological implications of food and eating."

As per Caliendo, M. A. (1970) [1], "Nutritional status is the condition of health of the individual as influenced by utilization of the nutrients. It is determined through correlated responses obtained by a careful medical and dietary history and physical examination."

The nutritional status of the mother during pregnancy is believed to influence not only the course of pregnancy but also the nutritional status of the new born. There is a clear evidence of a social economic gradient in birth weights of infants. Working mother tend to have heavier babies than non-working ones. Closely spaced pregnancies, severe anaemia and heavy physical work during pregnancy are contributing factors for high mortality rate and low birth weight of babies. (Shaw, 1983) [7].

It is well recognized that the requirement of most nutrients increases during pregnancy, particularly during the latter half. A woman during pregnancy requires extra 300 Kcal and 15g protein. The requirement of vitamin 'B', thiamine, Riboflavin and niacin are based on the energy requirement. The greater the energy need, the higher would be the vitamin 'B' need.

The RDA's (Recommended Dietary Allowances) suggests for almost all the nutrients increase

during pregnancy but the requirement for a special nutrient increase substantially. These nutrients include energy, protein and calcium. Besides these nutrients, iron and zinc are the other trace elements which are of vital importance during pregnancy. (ICMR, 1989) [3].

2. Review of Literature

Khandat, Maya (2014) [4] Studied on "Nutritional status of rural pregnant women in Beed district of Maharashtra state of India". In Beed district of Maharashtra state, a purpose of the study is to determine the prevalence of anemia and to explore factors associated with anemia in rural Indian pregnant population. For the study random sample selection method is used, a total of 200 rural pregnant women, from 20 villages in Beed district were selected. Data on socioeconomic status, pregnancy, nutritional status and food consumption were collected. Hemoglobin estimation of the samples was done. Observed data were analyzed statistically. It was investigated in the present study, that prevalence of anemia was significantly higher. Literacy, occupation and low standard of living of the study women were the contributing factors, their awareness about anemia and its prevention by regular consumption of iron foliate tablets and increase in food intake. Age of marriage, parity and fetal loss also contributed to hemoglobin level. The antenatal services in the first trimester along with availability and consumption of iron foliate tablets over 3 months influenced hemoglobin levels.

According to Rahaman, Shameema and Singh, Kiran (2017) [5], "Analysis of nutritional status of pregnant women in rural areas of Bihar state" This study assesses nutritional status of pregnant women in rural of Bihar State. Patna Medical College and Darbhanga Medical College was selected for the study area. All the pregnant women in the mean age group of 33 years and had their antenatal care from the medical College were selected for the study. This study included two phases in which the phase consists a pre-tested structured interview schedule was used for the collection of general information. For the collection of dietary information 24 hour recall method of diet survey was used. Hemoglobin level was collected from Doctor's report for observing the anemic condition. It was found that the mean Iron, calcium, carotene and folic acid was much lower than the recommended dietary allowances (RDA) volumes. As compare to 1st and 2nd trimester percent incidence of common nutritional deficiencies among the pregnant women was much higher in the third trimester. Nutrition intake was lower than RDA in case of many sample women though they have better education and high-income.

Dhanashree R. K. and *et al*. (2020) [2] Studied on "Assessment of Nutritional status in Pregnant women". In this cross–sectional study assessed the nutritional status of pregnant women in Belagavi from rural area. For this as a sample 109 pregnant women attending ANC clinics in rural areas of Belagavi was selected by simple random sampling method. For the data to assess nutritional status was obtained by using predesigned structured questionnaire which included socio-demographic profile, anthropometric measurements, biochemical investigations and dietary intake. For data analyzed chi-square test was used. The conclusions of the study showed that (35%) of women had monthly family income <10,000, (35%) had between 10,000-20,000, (20.4%) had between 20,000-30,000 while (9.7%) had >30,000. Underweight women were (19.4%), women had normal BMI were (51.5%), overweight women were (23.3%) and obese were (5.8%). The percentage of Women had mild anemia was (53.4%), (23.3%) had moderate anemia and (2.9%) had severe anemia. According to Recommended Dietary Allowance (RDA), Calorie intake of (92.2%) pregnant women was below while (7.8%) pregnant women consumed calories equivalent to RDA.

3. Methodology

3.1 Objectives of Study

1. To find out the background status of working and no-working pregnant women.
2. To access and compare the dietary pattern by means of food and nutrients intake, percent adequacy of nutrients of working and non-working pregnant women.
3. To study the nutritional status of working and non-working pregnant women.

3.2 Sample Selection Method

The present study consisted of 400 pregnant women in all. Out of 400 samples, 200 were working pregnant and 200 were non-working pregnant women in Bhandara district were selected by purposively sampling method.

3.3 Data Collection Method

Data Collection parameters used for the study were survey and predesigned structured questionnaire for assessment of nutritional status, anthropometric measurements for Height, weight and BMI, assessment of dietary intake, food consumption pattern and nutrient intake calculated from three day dietary record during pregnancy, Biochemical assessment for hemoglobin.

3.4 Statistical Analysis

Data was analyzed using SPSS software and was tabulated statistically using percent, t-test, z-test was applied.

4. Result and Discussion

The collected data was analyzed with descriptive and inferential statistical techniques.

Table 1: Background information of working and non- working pregnant woman

S. No.	Particular	Working Pregnant women		Non-Working Pregnant women	
		N=200	100%	N=200	100%
1	**Age Group**	**F**	**%**	**F**	**%**
	18-22	8	4	24	12
	22-26	32	16	96	48
	26-30	86	43	52	26
	30 and above	74	37	28	14
2	**Education**				
	Primary	-	-	16	8
	High School	6	3	20	10
	Intermediate	24	12	58	29
	Graduate	26	13	64	32
	Post Graduate	44	22	32	16
	Higher Professional Degree	100	50	10	5
3	**Type of Family**				
	Nuclear	117	58.5	73	36.5
	Joint	83	41.5	127	63.5
4	**Monthly Family Income (Rs.)**				
	12,000 – 16,000 Rs.	32	16	24	12
	16,000 – 20,000 Rs.	70	35	116	58
	20,000 – 25,000 Rs.	98	49	60	30
5	**Food Habits**				
	Vegetarian	120	60	130	65
	Non-vegetarian	80	40	70	35

From the above table, findings reveal that majority of the working pregnant women (43%) were between 26-30 years of age where as majority of non-working pregnant women (48%) were between 22-26 years of age. In case of working class, pregnancy was high in the age group of 26-30 years. Career making was the main reason that delayed the onset of pregnancy. On the basis of educational classification, majority of the working pregnant women (50%) were having Higher Professional Degree and remaining pregnant women were educated up to High School (3%), Intermediate (12%), Graduate (13%) and Post graduate (22%). On the contrary, in non-working pregnant women, majority (32%) of the women was educated up to Graduate and remaining pregnant women were educated up to Primary (8%), High School (10%), Intermediate (29%), Post Graduate (16%) and Higher Professional Degree (5%). Distribution of the pregnant women on the basis of type of family, majority (58.5%) of the working pregnant women were belongs to nuclear family where as on the contrary, a high percentage that is (63.5%) of non-working pregnant women belong to joint family. It clearly shows that joint family system is now disintegrating among working pregnant women which may be due to education, employment and higher cost of living where as joint family system is more prevalent among non-working pregnant women. On the basis of monthly family income, majority (49%) of the working pregnant women were earning between Rs. 20,000-25,000 while majority (58%) of the non-working pregnant women were earning between Rs. 16,000-20,000. According to food habits, perusal of the data reveal that (60%) of working and (65%) of non-working pregnant women were vegetarians while (40%) and (35%) were non-vegetarians respectively.

Table 2: Mean food intake of working and non- working pregnant woman as compared to RDA

S. No.	Food Groups	RDA (gm)	Working		Non-Working		'z' Value
			Intake (N=200)	't' Value	Intake(N=200)	't' Value	
1	Cereals (gm)	400	332.1 ± 46.0	20.8	327.5 ± 42.1	24.3	1.043^{NS}
2	Pulses (gm)	70	45.9 ± 13.4	25.3	42.8 ± 14.2	26.8	2.245
3	Green Leafy Vegetables (g)	150	112.1 ± 6.4	23.4	101.1 ± 3.7	26.2	8.210
4	Roots and Tubers (gm)	75	50.9 ± 12.1	27.8	60.2 ± 10.2	20.3	6.26
5	Other Vegetables (g)	75	55.4 ± 12.4	22.3	49.5 ± 14.5	24.7	4.37
6	Fruits (gm)	30	19.4 ± 6.4	23.1	17.5 ± 6.7	26.0	2.90
7	Milk and Milk Products (ml)	325	197.1 ± 71.1	25.3	229.1 ± 65.2	26.6	4.72
8	Fats and oils	35	20.0 ± 6.2	34.0	22.4 ± 7.0	25.2	3.62
9	Sugar and Jaggery (gm)	40	24.1 ± 8.6	25.9	24.8 ± 9.1	23.3	0.79 ^{NS}

't' value indicate comparison of food intake with RDA; Significant at 0.01

'z' value indicate comparison of food intake of working and non-working pregnant women; Significant at 0.05 and NS is Not Significant

From the above table, means intake of cereals by working and non-working pregnant women varied from (332.1± 46.0g) and (327.5±42.lg), respectively. Quantity of cereals consumed by working and non-working pregnant women was significantly (P<0.01) lower than the recommended levels and Working pregnant women consumed more cereals than the non-working pregnant women. The calculated value of 'z' (1.043) was not significant at the 0.05 level. Mean intake of pulses consumed by working pregnant women was (45.9±13.4g) and non-working pregnant women were (42.8±14.2g). Quantity of pulses consumed by both the type of pregnant women was significantly (P<0.0l) lower than that of recommended level. Working pregnant women had significantly more amount of pulses in their diet than the non-working pregnant women. The observed value of 'z' (2.245) was significant at the 0.05 level. Hence, intake of pulses by working and non-working pregnant women shows significant difference. Mean intake of green leafy vegetables consumed by working and non-working pregnant women was (112.1±6.4g) and (101.1±3.7g) respectively. Quantities of green leafy vegetables consumed by both the type of pregnant women were significantly (P<0.01) lower than the recommended levels. Working pregnant women had significantly (P<0.01) more green leafy vegetables in their diets than non-working pregnant women. The calculated value of 'z' (8.210) shows a significant difference at the 0.05 level. This concluded that there is a difference in the means of intake of green leafy vegetables in both the type of pregnant women. Mean intake of roots and tubers by working pregnant women from (50.9±12.1g) and non-working women from (60.2±10.2g). Intake of roots and tubers by working and non-working pregnant women was significantly lower (P<0.01) than the recommended levels. Working pregnant women had significantly lower amount of roots and tubers in their diet than the non-working pregnant women. The calculated value of 'z' (6.26) was significant at the 0.05 level. Mean intake of other vegetables by working and non-working pregnant women was (55.4±12.4g) and (49.5±14.5g), respectively. Quantities of other vegetables consumed by working and non-working pregnant women were significantly (P<0.01) lower than the RDA. There was a significant difference in the intake of other vegetables in both the type of pregnant women. The calculated value 'z' (4.37) was significant at the 0.05 level. This concluded a significant difference in means of intake of other vegetables in both the type of pregnant women. Mean intake of fruits by working pregnant women was (19.4±6.4g) and (17.5±6.7g) by non-working pregnant women. The consumption of fruits by both the type of pregnant women were significantly (P<0.01) lower than the RDA levels. Working pregnant women had more fruits in their diet than the non-working pregnant women. The observed value of 'z' (2.90) was significant at the 0.05 level. This shows a significant difference in the means of intake of fruits in both the type of pregnant women. Mean intake of milk and milk products by working and non-working pregnant women was (197.5±71.1g) and (229.7±65.2g) respectively. The consumption of milk and milk products by both the type of pregnant women was significantly (P<0.01) lower than the recommended levels. Non-working pregnant women had significantly more milk and milk products in their diet than the working pregnant women. The calculated value of 'z' (4.72) was significant at the 0.05 level. This shows a significant difference in the means of intake of milk and milk products in both the type of pregnant women. Mean intake of fats and oils by working pregnant women was (20.0±6.2g) and (22.4±7.0g) by non-working pregnant women. The consumption of fats and oils by both the type of pregnant women were significantly

(P<0.01) lower than the RDA levels. Non-working pregnant women had more fats and oils in their diet than their working pregnant women. The observed value of 'z' (3.63) was significant at the 0.05 level. This shows a significant difference in the means of intake of fats and oils in both the type of pregnant women. Mean intake of sugar and jaggery consumed by working and non-working pregnant women was (24.1±8.6g) and (24.8±9.lg) respectively. Quantities of sugar and jaggery consumed by both the type of pregnant women were significantly (P<0.01) lower than the recommended levels. The observed value of 'z' (0.79) was non-significant. There was no significant difference in sugar and jaggery intake by both the type of pregnant women.

Table 3: Percent adequacy of food intake of working and non- working pregnant woman

S. No.	Food Groups	Working	Non-Working
1	Cereals (gm)	83.0	81.8
2	Pulses (gm)	65.5	61.1
3	Green Leafy Vegetables (gm)	74.7	67.4
4	Roots and Tubers (gm)	67.8	80.2
5	Other Vegetables (gm)	73.8	66.0
6	Fruits (gm)	64.6	68.0
7	Milk and Milk Products (ml)	60.7	70.6
8	Fats and oils (gm)	57.1	64.0
9	Sugar and Jaggery (gm)	60.2	62.0

From the above table, percent adequacy of food intake by working and non-working pregnant women Cereals intake was (83%) of working pregnant women and (81.8%) of non-working pregnant women. Pulses intake was only (65.5%) and (61.1%) of RDA by working and non-working pregnant women respectively. The intake of green leafy vegetables was (74.7%) and (67.4%) of RDA by working and non-working pregnant women respectively. Green leafy vegetables intake was (74.7%) of working pregnant women and (67.4%) non–working pregnant women. The intake of other vegetables was (73.8%) and (66%) of RDA by working and non-working pregnant women respectively. The intake of fruits was (64.6%) and (58.3%) of RDA by working and non-working pregnant women respectively. Milk and milk products intake was (60.7%) and (70.6%) of RDA by working and non-working pregnant women respectively. The intake of fats and oils was (57.1%) and (64%) of RDA by working and non-working pregnant women respectively. The intake of sugar and jiggery was (60.2%) and (62%) of RDA by working and non-working pregnant women respectively.

Table 4: Mean nutrients intake of working and non- working pregnant woman as compared to RDA

S. No.	Nutrients	RDA	Working		Non-Working		'z' Value
			Intake (N=200)	't' Value	Intake (N=200)	't' Value	
1	Protein (gm)	65	44.6 ± 12.9	22.1	40.0 ± 13.0	27.0	3.55
2	Energy (Kcal)	2500	1949.1 ± 384.1	20.2	1851.1 ± 359.3	19.5	1.81
3	Calcium (mg)	1000	502.3 ± 165.5	42.5	659.2 ± 182.1	40.2	1.15
4	Iron (mg)	38	25.3 ± 5.8	30.3	22.7 ± 6.7	32.0	4.15
5	Carotene (µg)	2400	1945.2 ± 361.7	17.7	1765.5 ± 431.0	20.8	4.52
6	Thiamine (mg)	1.3	1.01 ± 0.3	21.0	0.9 ± 0.2	23.8	4.21
7	Riboflavin (mg)	1.5	0.83 ± 0.3	24.9	0.58 ± 0.3	32.8	6.58
8	Niacin (mg)	16	10.5 ± 2.9	26.0	8.3 ± 3.8	28.1	6.51
9	Vitamin C (mg)	40	23.4 ± 8.7	26.9	19.2 ± 8.1	36.1	5.00
10	Folic Acid (µg)	300	217.5 ± 46.2	25.2	160.4 ± 49.8	39.5	5.64
11	Vitamin D (I.U)	200	142.4 ± 29.7	27.3	133.3 ± 27.2	34.5	3.20

't' value indicate comparison of food intake with RDA; Significant at 0.01

'z' value indicate comparison of food intake of working and non-working pregnant women; Significant at 0.05 and NS is Not Significant

From the above table, mean intake of protein by working and non-working pregnant women varied from (44.6±12.9g) and (40.0±13.0g) respectively. The intake of protein by both the type of pregnant women was significantly (P<0.01) lower than that of recommended level. The observed value of 'z' (3.55) was significant at 0.05 level which shows significant difference. Hence, working pregnant women were taking more protein as compared to non-working pregnant women. Mean intake of energy by working and non-working pregnant women was (1949.1±384.1g) and (1851.1±359.3g) respectively. The intake of energy by both the type of pregnant women was significantly (P<0.01) lower than that of recommended level. The observed value of 'z' (1.81) was significant at 0.05 level, thus data reveals that the energy intake by working pregnant women was high than the non-working pregnant women. Mean intake of calcium by working pregnant women was (502.3±165.5mg) and non-working pregnant was (659.2±182.1mg) against RDA value. The comparison of calcium intake of working and non-working pregnant women shows that the diets of both the type of pregnant women was significantly (P<0.01) lower than that of recommended level. The calculated value of 'z' (1.15) was significant at 0.05 level thus shows there is a significant difference in the means of calcium intake of working and non-working pregnant women. Mean intake of iron by working and non-working pregnant women was (25.3±5.8mg) and (22.7 ± 6.7mg) respectively. Consumption of iron by both the type of pregnant women was significantly (P<0.0 1) lower than the recommended level. Working pregnant women had significantly (P<0.01) more iron intake than the non-working pregnant women. The value of 'z' (4.15) was significant at 0.05 level it shows a significant difference in the means of iron intake in both the type of pregnant women. Mean intake of carotene by working and non-working pregnant women was (1945.2±361.7µg) and (1765.5±431.0µg) respectively. Working pregnant women consumed significantly higher

carotene as compared to non-working pregnant women but the intake was significantly (P<0.01) lower in both the type of pregnant women than RDA. Differences in means of carotene intake were found to be 'z' value (4.52) was significant at 0.05 level shows working pregnant women were taking more carotene as compared to non-working pregnant women. Mean intake of thiamine was (1.01±0.3mg) and (0.9±0.2mg) by working and non-working pregnant women respectively. Consumption of thiamine by both the type of pregnant women was significantly (P<0.0 1) lower than the recommended levels. 'z' value (4.21) significant at 0.05 level reveals that working pregnant women had higher intake of thiamine than non-working pregnant women. Riboflavin mean intake by working and non-working pregnant women was (0.83±0.3mg) and (0.58 ±0.3mg) respectively. Consumption of riboflavin by both the working and non-working pregnant women was significantly (P<0.01) lower than the RDA value. The observed value of 'z' (6.58) has given a significant at 0.05 level indicate that working pregnant women consumed higher riboflavin as compared to the non-working pregnant women. Mean intake of niacin by working and non-working pregnant women was (10.5±2.9mg) and (8.3± 3.8 mg) respectively. It was observed that mean intake of niacin by working and non-working pregnant respondents was significantly (P<0.01) lower than RDA but the intake of niacin by working pregnant women was comparatively higher than the non-working pregnant women. The calculated value of 'z' (6.51) was significant at 0.05 level it shows a significant difference in the means of niacin intake in both the working and non-working pregnant women. Mean intake of vitamin C by working and non-working pregnant women was (23.4±8.7mg) and (19.2±8.1mg) respectively. The consumption of vitamin C in both the working and non-working pregnant women was significantly (P<0.01) lower than the recommended levels. 'z' value (5.00) significant at 0.05 level reveals that working pregnant women had higher intake of vitamin C than non-working pregnant women. Folic acid mean intake by working and non-working pregnant women was (217.5±46.2µg) and (160.4 ± 49.8µg) respectively. Consumption of folic acid by working and non-working pregnant women was significantly (P<0.0 1) lower than the RDA value. 'z' value (5.64) significant at 0.05 level reveals that working pregnant women had higher intake of folic acid than the non-working pregnant women. Mean intake of vitamin D by working and non-working pregnant women was (142.4±29.7LU) and (133.3± 27.2LU) respectively. It was observed that mean intake by working and non-working pregnant women was significantly (P<0.01) lower than RDA. The calculated value of 'z' (3.20) was significant at 0.05 level this shows a significant difference in the means of intake of vitamin D in both the type of pregnant women. Statistical analysis of data reveals that working pregnant women had higher intake of vitamin D than the non-working pregnant women.

Table 5: Percent adequacy of nutrient intake working and non- working pregnant woman

S. No.	Nutrients	Working	Non-Working
1	Protein (gm)	68.6	61.5
2	Energy (Kcal)	77.9	74.0
3	Calcium (mg)	50.2	65.9
4	Iron (mg)	66.5	59.7
5	Carotene (µg)	81.0	73.5
6	Thiamine (mg)	77.6	69.2
7	Riboflavin (mg)	55.3	38.6
8	Niacin (mg)	65.6	51.8
9	Vitamin C (mg)	58.5	48.0
10	Folic Acid (µg)	72.5	53.4
11	Vitamin D (I.U)	71.2	66.6

From the above table, percent adequacy of nutrient intake by working and non-working pregnant woman, intake of protein was (68.6%) and (61.5%) of RDA by working and non-working pregnant women respectively. Energy intake was (77.9%) and (74%) of RDA by working and non-working expectant women, respectively. Calcium intake was (50.2%) and (65.9%) of RDA by working and non-working expectant women respectively. Iron intake was (66.5%) and 959.7%) of RDA by working and non-working expectant women respectively. Working and non-working pregnant women contained (81%) and (73.5%) of the required amount of carotene respectively. Working and non-working pregnant women provided (77.6%) and (69.2%) of the required thiamine respectively. Riboflavin intake was (55.3%) and (38.6%) of RDA by working and non-working pregnant women respectively. The niacin intake was (65.6%) and (51.8%) of RDA by working and non-working pregnant women respectively. The vitamin C intake was (58.5%) and (48%) of RDA by working and non-working pregnant women respectively. The folic acid intake was (72.5%) and (53.4%) of RDA by working and non-working pregnant women respectively. The vitamin D intake was (71.2%) and (66.6%) of RDA by working and non-working pregnant women respectively.

Table 6: Anthropometric measurements of working and non-working pregnant woman

Anthropometric measurements	Working Mean ± SD	Non-Working Mean ± SD	Standard Value	'z' Value
Height (cm)	152.3 ± 7.3	148.5 ± 8.1	158	2.392
Weight (kg)	51.2 ± 5.7	52.6 ± 6.0	54	4.982

From the above table, mean and SD of height and weight of working and non-working pregnant women were (152.3 ± 7.3cm) and (148.5 ± 8.1cm) and (51.2 ± 5.7kg) and (52.6 ± 6.0kg) respectively. The mean height and weight of working and non-working pregnant women was less than that of Indian reference women. The calculated value of 'z' (2.392) and (4.982) were significant at 0.05 levels and it shows a significant difference in the means of height and weight in both the type of pregnant women.

Table 7: Body Mass Index of working and non- working pregnant woman

S. No.	Nutritional Grade	BMI	Working (N=200)		Non-Working (N=200)	
			F	%	F	%
1	II Grade CED	16.0-17.0	3	1.5	7	3.5
2	I Grade CED	17.1-18.5	7	3.5	14	7.0
3	Low Normal	18.6-20.0	48	24.0	76	38.0
4	Normal	20.1-25.0	137	68.5	93	46.5
5	Overweight	25.1-30.0	5	2.5	9	4.5
6	Obese	>30.0	0	0.0	1	0.5
Total			200	100	200	100

From the above table, among working pregnant women, maximum (68.5%) pregnant women were from normal category having 20.2- 25.0 BMI followed by low normal category (24%) having 18.5- 20.0 BMI. Among non-working pregnant women too, maximum (46.5%) pregnant women were from normal category followed by low normal category (38.0%). (1.5%) and (3.5%) of working and non-working pregnant women respectively were from II Grade chronic energy deficiency. (3.5%) and (7%) of working and non-working pregnant women respectively were from I Grade chronic energy deficiency. (5%) and (4.5%) of working and non-working pregnant women respectively were from overweight and non-working pregnant women only (0.5%) obese.

Table 8: Hemoglobin level of working and non- working pregnant woman

Groups	Hemoglobin level (gm/dl) Mean ± SD	Standard Value	'z' Value
Working (N=200)	9.8 ± 0.7	12.0g/100 ml	24.43
Non-Working (N=200)	7.4 ± 1.2		

Significant at 0.05

From the above table, mean hemoglobin level of working and non-working pregnant women was 9.8 ± 0.7 and 7.4 ± 1.2 g/100 ml of blood respectively. It was lower than the standard value of 12.0g/100ml of blood. The calculated value of 'z' (24.43) was significant at 0.05 levels. Hence, it shows a significant difference in the means of hemoglobin in both the type of pregnant women.

5. Conclusion

Mean intake of cereals, pulses green leafy vegetables, roots and tubers, other vegetables, fruits, milk and milk products, fats and oils and sugar and jaggery was significantly ($P<0.01$) less than the recommended levels in working and non-working pregnant women. As compared to the non-working pregnant women, the working pregnant women had significantly more intake of cereals, pulses, green leafy vegetables, other vegetables and fruits. On the other hand, non-working pregnant women significantly consumed more of roots and tubers, milk and milk products and fats and oils. No significant difference was noted in the intake of sugar and jaggery between working and non-working pregnant women. In terms of adequacy level, it was observed that majority of the working and non-working pregnant women were consuming all the food groups in less amount than the recommended allowances.

Mean intake of protein, energy, calcium, iron, carotene, thiamine, riboflavin, niacin, vitamin C, folic acid and vitamin D was significantly ($P<0.01$) less than the recommended allowances in working and non-working pregnant women. As compared to non-working pregnant women, working pregnant women had significantly more intake of all the above written nutrients except calcium. In terms of adequacy level, it was observed that majority of the working and non-working pregnant women were consuming all the nutrients in less amount than the recommended allowances.

There is a significant difference in the means of height and weight in the working and non-working pregnant women. Majority (68.5%) and (46.5%) of both the working and non-working pregnant women were in the category of normal BMI respectively. There is a significant difference in the means of hemoglobin in the working and non-working pregnant women.

6. References

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