INTERNATIONAL JOURNAL OF RESEARCHES IN BIOSCIENCES, AGRICULTURE & TECHNOLOGY
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www.vmsindia.org

COMPARATIVE STUDY OF NUTRITIONAL STATUS OF MENOPAUSAL WOMEN (45-55) FROM RURAL AND URBAN AREA

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ABSTRACT

Women demand good nutrition to maintain healthy life. Menopause is an unavoidable change that every women will experience, assuming she reaches middle age and beyond. The present study was carried out to assess the nutritional status of women during menopause from rural & urban areas. Survey of rural women was done in Darabada, Gondia district and of urban women was done in west Nagpur city. An interview cum questionnaire schedule was used to elicit general Information, anthropometric measurements, dietary intake, and menopausal symptoms. Comparisons of nutrient intake were made with Recommended Dietary Allowances of ICMR. The result of the study showed that urban women were observed superior in anthropometric measurements as compared to the rural women. Result on nutrient intake of women showed deficiency in almost all nutrients. Energy and protein deficiency was found to be higher in rural women as compared to urban women similarly iron intake of the women showed maximum deficit (62.38 %) among rural women and (44.04 %) among urban women. The excess of folic acid and vitamin c was found in both the groups. The symptoms of menopause were found in both the groups with maximum hot flashes and night sweat was observed in urban women.

Key words: Menopause, Adult Women, Nutritional Status.

INTRODUCTION

Menopause is an event that typically (but not always) occurs in women in midlife, during their late 40 years or early 50 years, and it signals the end of the fertile phase of a woman's life. Many hormonal changes occur in menopause. Menopause can be declared (in all adult woman who is not pregnant, is notlactating or who has an intact uterus) when there has been amenorrhea (absence of anymenstruation) for any complex year. However, there are many signs and effects that lead up this point, many of which may extend well beyond the date of menopause. These include: irregular menses, vasomotor instability (hot flashes and night sweats), atrophy of genitourinary tissues, increased stress, breast tenderness, vaginal dryness, forgetfulness, mood changes, and in certain causes osteoporosis and or heart disease (**Achie, L. et al. 2011).**

The cultural context within which a women lives can have a significant impact on the way she experiences the menopausal transition. Social location affects the way women perceive menopause and its related biological effects. Research indicates that whether a women views menopause as a medical issue or an expected life changed is correlated with her socio-economic status. Ethnicity and geographical location also play a role in the experience of menopause.After study the literature regarding menopause which occurs in all women after particular age, considering all the symptoms during this phase, the curiosity arose to compare the nutritional status of women from urban and rural areas.

METHODOLOGY

The present study was conducted to assess the nutritional status of menopausal women (45-55 years) belonging to rural and urban area. Sample was selected by purposivesampling technique, 50 adult women from urban area of west Nagpur city and 50 adult women from rural area named Darabada, Taluka- Salekasa, District – Gondia.The information was collected by questionnaire cum interview method. The questionnaire was focused to collect the information regarding their socio-economic status, anthropometric measurements, and dietary intake. Three days dietary recalls of subjects were taken. The nutrient intake of the subjects was compared with the RDA of that age group. The anthropometric measurements included height (cm), weight (kg), waist circumference (WC), hip circumference (HC), which were taken using proper instruments. WC was measured in cm at the naval point by using a measuring tape. HC was measured at maximum sit level by using a measuring tape. Waist to Hip ratio (WHR) is calculated as the ratio of circumference of waist over hip circumference.Body Mass Index (BMI) was calculated. The collected data was compiled and tabulated. To see the significant difference between the anthropometric indices, nutrient intake of subjects from urban and rural area Critical Ratio (C.R.) test was applied.

RESULT AND DISCUSSION

The present study was conducted and the data was presented and discussed in following way.The age wise distribution of the subjects from rural and urban area is presented in table 1.

Table no. 1: Age wise Distribution of the Subjects

Sr. No.	Age Range (years)	Rural Area		Urban Area	
		No.	%	No.	%
1.	45-50	18	36	26	52
2.	51-55	32	64	24	48
Total		50	100	50	100

From the table no. 1 it is observed that from the selected sample maximum of 64 % adult women from the age group of 51-55 years were from rural area, whereas 52 % women of 45-50 years were from urban area.The general information which gives an idea about their socio-economic status presented in table no. 2.

Table no. 2: General Information of the Subjects

Sr. No.	Parameters	Rural Area		Urban Area	
		No.	%	No.	%
1.	**Educational Qualification**				
	Illiterate	11	22	00	00
	Primary	16	32	15	30
	Middle school	12	24	5	10
	SSC	5	10	5	10
	HSS	4	8	4	8
	Graduate	2	4	9	18
	Post Graduate	00	00	12	24
2.	**Occupation**				
	Employed	2	4	16	32
	Unemployed	48	96	34	68
3.	**Type of Family**				
	Nuclear	42	84	46	92
	Joint	6	12	4	8
	Extended	2	4	00	00
4.	**Size of family**				
	1-3	38	76	18	36
	4-6	37	74	32	64
	7-9	06	12	00	00

The observations from the table 2 showed that, 22 % women from rural area were observed illiterate. Maximum of 24 % women from urban area were completed their post graduation. 24 % women from rural area were completed their education at middle school level. From these observations it is seen that the educational status of women from the urban area is higher than the women from the rural area. Maximum women were unemployed from both rural (96 %) and urban (68 %) area. In both the areas maximum women belongs to the nuclear family i.e. 84 % and 92 % from rural and urban area respectively. Maximum of 12 % families from rural area are having large family size as compared with the urban families.

Anthropometric Measurements

In the anthropometric measurements height, weight, waist and hip circumference was taken and waist hip ratio and BMI were calculated. The mean, range and standard deviation of the data is presented in table no. 3.

Table no. 3: Anthropometric Measurements of the Subjects

Sr. No.	Parameters	Rural area (N=50)	Urban area (N=50)
1.	**Height (cm)** Mean	149.46	154
	Range	(133-158)	(142-170)
	S.D.	± 5.05	± 5.34
	C.R. Test	4.36*	
2.	**Weight (kg)** Mean	44.32	56.8
	Range	(30-60)	(36-74)
	Std dev	± 7.41	± 8.86
	C. R. Test	7.65*	
3.	**BMI (kg/m²)** Mean	19.96	23.49
	Range	(15.55-25.08)	(17.65-32.45)
	Std dev	± 2.50	± 3.50
4.	**Waist Circumference (cm)** Mean	71.64	90.41
	Range	(60-97.5)	(65-112)
	Std dev	± 8.43	± 10.29
5.	**Hip Circumference (cm)** Mean	92.58	112.17
	Range	(75-112)	(82-150)
	Std dev	± 7.71	± 19.08
6.	**Waist: Hip ratio** Mean	0.76	0.80

	Range	(0.6-0.92)	(0.5-0.95)
	Std dev	± 0.0 5	± 0.12

S.D.- Standard Deviation,*C. R.Value-significant Difference, ** C. R.Value-insignificant Difference

Height (cm)

From the table no. 3 it is observed that the mean height of women from rural area and urban area is 149.46 ± 5.05 and 154 ± 5.34 respectively.

Weight (kg)

From the above table it is observed that the mean weight of women from rural and urban areas is 44.32 ± 7.41 and 56.8 ± 8.86 respectively.

The result of the C.R. test shows that the height and weight of urban women is superior to height and weight of rural women.

BMI (kg/m²)

From this observation it is clear that maximum women from urban area are under the normal category while maximum women from rural area are under the underweight category.

Waist Circumference (cm)

From the above table it is observed that waist circumference of the women from urban area was higher i.e. 90.41 ± 10.29 as compared to the women from rural area i.e. 71.64 ± 8.43.

Hip Circumference (cm)

From the above table it is observed that hip circumference of the women from urban area was higher i.e. 112.17± 19.08 as compared to the women from rural area i.e. 92.58 ± 7.71.

Waist: Hip ratio

From the above table it is observed that waist: hip ratio of the women from rural and urban area was 0.76 ± 0.0 5 and 0.80 ± 0.12 respectively.

Dietary Information

Information of the surveyed subjects related to food is given under following subtitles.

Food Habits

Food habits of the women from rural and urban area are presented in fig. 1 and 2.

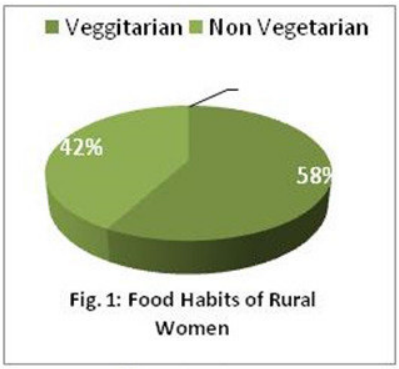

Fig. 1: Food Habits of Rural Women

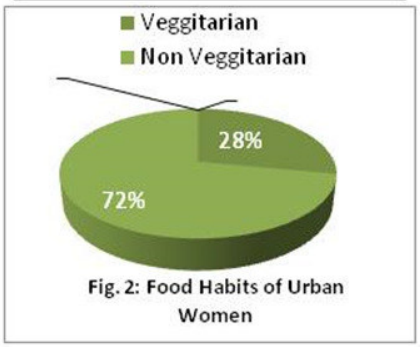

Fig. 2: Food Habits of Urban Women

From the figure 1and 2 it is observed that maximum of 58 % women from rural area are vegetarian as compared to the women from urban area (28 %).

Nutrient Intake

Nutrient intake i. e., energy, protein, fat, carbohydrate, calcium, iron, phosphorus, folic acid and vit. c of the rural and urban women was calculated by Gopalan, 2006. The mean, standard deviation and deficit percentage were calculated and the values were compared with the Recommended Dietary Allowances of ICMR, 2011 and the data is presented in a table no. 5.

Table no. 5: Mean Nutrient Intake of the Women from Rural and Urban Area with RDA

Sr. no.	Nutrients	Mean Actual Intake Range		Standard Deviation ±		RDA	Deficit/ Excess (%)	
		Rural	Urban	Rural	Urban		Rural	Urban
1	Energy(kcal)	1345.32 (865.58-1769.37)	1558.90 (1052.96-1858.63	±173.49	±173.4	2230	-39.67	-17.95
2	Protein	31.56	45.17	± 7.8	± 8.	49*	-36	-16

	(gm)	(14.76-52.86)	(24.52-55.57)	0	20		.19	.35
3	Carbohydrate (gm)	208.62 ± 53.49 (116.6-269.38)	233.80 (181.28-292.62)	± 31.47	± 31.92	-	-	-
4	Fat (gm) (Invisible + visible)	45.54 (23.69-60.38)	50.22 (43.42-70.29)	± 6.83	± 4.71	-	-	-
5	Calcium(mg)	364.66 (196.49-917.57)	425.76 (237.4-856.7)	±155.89	± 134.13	600	-39.23	-29.04
6	Iron(mg)	7.90 (3.45-17.08)	11.75 96.09-16.77)	± 3.51	± 2.72	21	-62.38	-44.04
7	Phosphorus (mg)	539.28 (240.89-1060.53)	539.69	± 211.24	± 110.07	600	-10.12	-10.05
8	Vitamin C (mg)	135.56 (73.11-187.52)	148.75	± 32.47	± 61.94	40	238.9	Excess 271.87
9	Folic acid (mg)	151.5 (79-215.42)	161.78	± 53.64	± 47.16	100	12.87	Excess 61.78

* The RDA for protein is based on the IBW of the subjects (Brocas Index)

From the table no.5 it is observed that the intake of calories (1345.32 ± 173.49), proteins (31.56±7.80), carbohydrates (208.62 ± 31.47), calcium (364.66±155.89), iron (7.90 ± 3.51) and phosphorus (539.28 ± 211.24) were found to be deficit than the RDA whereas, fat (invisible and visible) (45.54 ± 6.83), vitamin c (135.56 ± 32.47) and folic acid (151.5 ± 53.64) were observed much higher than the RDA. From the above results it is observed that the diet of women from rural area is lacking in all the major nutrients compared with RDA for adult women.

In case of adult women from urban area, the intake of calories (1558.90 ± 173.4), proteins (45.17 ± 8.20), carbohydrates (233.80 ± 31.92), calcium (425.76 ± 134.13), iron (11.75 ± 2.72) and phosphorus (539.69 ±110.07) were found to be deficit than the RDA whereas, fat (invisible and visible) (50.2 2 ± 4.71), vitamin c (148.75 ± 61.94) and folic acid (161.78 ± 47.16) were observed much higher than the RDA. From the above results it is observed that the diet of women from urban area is lacking in all the major nutrients compared with RDA for adult women.

To see the significant difference between the nutrient intake of rural and urban women C.R. test was applied and the result showed that the nutrient intake of women from urban area is significant to nutrient intake of women from rural area. The mean value of all major nutrients for urban women is higher than the mean value of all major nutrients for rural women. So that the nutrient intake of women from urban area is superior to nutrient intake of women from rural area.

Menopause

Menopause is associated with hormonal changes and can affect a woman's nutritional status as her body changes.

Awareness about Menopause

Menstruation and menopause are the natural process. But many women are still unaware about it. There are many sources by which they can collect the information and take the knowledge. The data about the awareness about menopause was collected by rural as well as urban women and presented in table no. 6.

Table no. 6: Awareness of Subjects about Menopause

Sr. No.	Awareness about Menopause	Rural women (N=50)		Urban women (N=50)	
		No.	%	No.	%
1.	Yes	42	84	44	88
2.	No	08	16	06	12
	Total	50	100	50	100

From table no. 6 it is observed that 84 % rural and 88 % urban women were aware about menopause.

Source of Information

Many women arrive at their menopause transition years without knowing about the process and changes. Very often a woman has not been informed in any way about this stage of life. After collecting the data about awareness of the menopause and the source of getting information was asked to the rural and urban women. The data is graphically presented in fig.3.

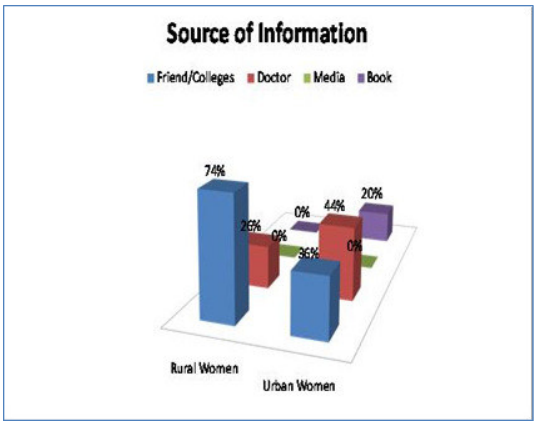

Fig 3: Source of Information

From this fig. 3 it is observed that 74 % and 36 % women from rural and urban area respectively get the information about menopause from their friends/colleges. 26 % rural women and 44 % urban women know from Doctors. Only urban women (20 %) know about menopause from books.

Age of Menopause occurrence

Age of menopause occurrence is different in every woman. Age variables were related to various stress coping strategies and measures. The data of age of menopause occurrence thus obtained to see the symptoms of menopause. The information is given in table no. 7.

Table no. 7: Age of Menopause Occurrence

Sr. No.	Age of menopause occurrence (years)	Women (Rural area)		Women (Urban area)	
		No.	%	No.	%
1.	40-42	00	00	03	06
2.	43-45	44	88	38	76
3.	46-48	6	12	9	18
Total		50	100	50	100

From table no. 7 it is observed that in 6 % urban women menopause occurred in 40-42 yrs of age group. In 88 % and 76 % rural and urban women menopause occurred in 43-45 yrs of age group respectively. In 12 % and 18 % rural and urban women menopause occurred in 46-48 yrs of age group respectively.

Symptoms of Menopause

There are many signs and effects that lead up to this point, many of which may extend well beyond the date of menopause. These include: irregular menses, viscometer instability (hot flashes and night sweats), atrophy of genitourinary tissue, increased stress, breast tenderness, vaginal dryness, forgetfulness, mood changes etc.

CONCLUSION

There is a significant differences observed in the anthropometric measurements and nutrient intake of the rural and urban women. Nutrient intake of urban women was observed less than the RDA but higher than the rural women. The problems during menopause were observed in rural as well as in urban women. The higher BMI observed in urban women which shows the symptoms of night sweat and hot flushes. During this critical period the adult women undergoes some physical and psychological changes irrespective of the geographic area. Socio economic factor play the contributory role while comparing the nutritional status of the women.

REFERENCES:

1. Achie, L. Olorunshola, K. Mabrouk. M.(2011): Age at Natural Menopause among Nigerian Women in Zaria, Nigeria'.*Asian Journal of Medical Sciences* 3(8):151-153.
2. Farquhar C, Marjoribanks J, Lethaby A, Suckling J. A., Lamberts Q. (2009): 'Long term hormone therapy for perimenopausal and postmenopausal women'.*Cochrane Database Syst Rev*) Apr. 8 Nov; 199(5):455-66.
3. Gopalan, Rama Sastri B.V, Balasubramanium S.C. (2004): Nutritive Value of Indian Foods, National Institute of Nutritional, ICMR, Hyderabad.
4. Mushtaq, S. Raj, K., (2011):Post-menopausal Women: A Study of Their Psycho-physical Changes with an Impact onFamily' http://www.jkscience.org/archiv/Antropologist, 13(2):131-135).

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