



Study of Dietary Pattern and Anthropometric Measurements of Adult Women From Some Human Communities

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Abstract:

The present study was aimed to assess the nutritional status of adult women from Sindhi and Muslim community. For this study a sample of 100 adult women from Sindhi and Muslim community of the age group 35-40 years of age from Nagpur city was selected. The survey was conducted through questionnaire cum interview schedule to collect the data related to their background information including the educational status of the women, occupation, type of family and family size. The anthropometric measurements i.e. height (cm), weight (kg), MUAC (cm) were measured and waist and hip ratio were calculated. On the basis of height and weight the Body Mass Index was also calculated. The results showed that maximum women from Sindhi community came under extremely obese category followed by overweight in Muslim community. The 24 hours dietary intake was recorded and its nutritive value was computed and compared with the RDA. The diet of adult women from Sindhi and Muslim community was lacking in all the major nutrients when compared with the RDA. It was noticed that the diet of the women from both the communities were high in fat as compared to RDA. It correlates the increased fat intake in the diet to the extreme obesity and overweight.

Key words:

Nutritional Status, Anthropometric measurements, Waist-hip ratio, Adult women

Introduction:

Food is an integral part of everyday life. Different cultures not only have different ways of living but eating habits too differ greatly. Nutritional practices and patterns are developed by people's tendency to settle into fixed habits. Eventually, they characterize regional and national eating practices either poor or good (Aykroyd, 1961). A religion plays a significant role in the lives of Indians to the extent that it imposes several restrictions even on the foods consumed by them. It is one of the numerous factors influencing





nutritional practices. Each religion has evolved certain rituals or customs, the observance of which is believed to be very important since this reaffirms the various beliefs of the religion. The formal religions of the world have long and a marked influence on the dietary habits of people of the world. Each religion is different but has very specific, strict rules and codes delineating what are acceptable as food. The nutritional status and consequent health of the elderly, pregnant and lactating women, infant and childcare practices are being greatly affected by religious taboos on foods. The high rate of malnutrition in the Indian society is traces to the social customs and inimical cultural practices dictated by religion (D. Usharani, 2003).

Nutritional deficiencies depend on the socio- economic and religious factors. Considering these factors the present study was undertaken to investigate the nutritional status among adult women from Sindhi and Muslim community.

Material and methods:

To conduct a survey the adult women between the age of 30-45 years were purposely selected from the Sindhi and Muslim community from Nagpur city. Total sample size was 100. 50 from Sindhi and 50 from Muslim community. The data was collected through questionnaire cum interview schedule. Questions related to their socio- economic status, anthropometric measurements i.e. height (cm), weight (kg), waist circumference (cm), hip circumference (cm) and dietary pattern were asked. Height was measured while the subject was standing without foot wear, to the nearest 0.1 cm, using a portable Steadiometer. Weight was measured with the subject standing and wearing light clothes to the nearest 0.1 kg using an electronic scale. The BMI (Body Mass Index) reflects the positive association between height and weight (Khan et al. 2004) was computed using the following standard formula:

$$\text{BMI} = \text{Weight (kg)} / \text{height (m}^2\text{)}$$

The information of food consumption patterns of the subjects was collected through 24 hr. dietary recall method using an interview schedule. Intake of nutrients was computed using the values given in the nutritive





value of Indian foods (Gopalan et al. 2009). The collected data were analyzed and discussed.

Result and discussion:

Table 1 shows the general information of 100 adult women from Sindhi and Muslim community. According to which 12 % adult women from Muslim community were post graduate whereas only 8 % Sindhi adult women were post graduate. The joint family system is an important social institution. Most of the food habits are formed within that joint family but it is observed that maximum of 84 % and 80 % Sindhi and Muslim adult women belong to the nuclear family respectively. 52 % and 48 % Muslim and Sindhi adult women were from small family size respectively where only 2-4 family members were there. The occupational status of the women shows not only the earning capacity of women but also the social change that is taking place today and the change in the role and status of women in the society (D. Usha Rani, 2003). Only 12 % Sindhi adult women were employed and from Muslim community only 8 % adult women were employed.

From the table 2 it is observed that there is no makeable difference was seen in the height and weight of adult women from Sindhi and Muslim community. The height (cm) of Sindhi and Muslim adult women was observed 158.32 ± 6.01 and 157.2 ± 5.33 and weight (kg) 67.50 ± 16.91 and 65 ± 11.65 respectively. The mean BMI value of Sindhi adult women was 27.02 ± 4.47 and Muslim adult women was 26.15 ± 6.72 observed. MUAC was calculated to see the fat deposition in the adult women. The MUAC value in Sindhi and Muslim adult women was observed 30.9 ± 3.52 and 30.77 ± 3.16 respectively. The waist and hip circumference was taken to calculate the waist hip ratio. The waist and hip circumference of selected adult women from Sindhi and Muslim community was observed 84.34 ± 17.7 / 85.76 ± 12.94 and 104.32 ± 17.63 / 107.4 ± 12.56 respectively. According to Gopalan and Gupta and WHO, a high waist hip ratio (WHR) has been accepted as a clinical method for identifying patients with abdominal fat accumulation. WHR greater than 0.85 in women is considered





high. Observations from the table reveal that the waist hip ratio of the adult women from Sindhi and Muslim community is within the range, i.e. 0.8 ± 0.06 and 0.77 ± 0.066 respectively.

It is evident from the table 3 that 8 % Sindhi adult women were found to be in the category of obese grade III i.e. extreme obesity, followed by 32 % obese grade I i.e. overweight. In Muslim adult women 24 % came under the category of obese grade I i.e. overweight followed by 12 % came under category obese grade II i.e. obesity. Changed lifestyle and consumption of energy and fat rich foods in these communities probably were responsible for such a high percentage of women came under obesity.

From the table 4 and 5 it is observed that the intake of calories, proteins, calcium, iron in the diet of adult women from Sindhi and Muslim community was less than the RDA. Where as the fat consumption was high i.e. 62.18 ± 16.12 and 57.03 ± 8.63 in Sindhi and Muslim community respectively. The vit. C and folic acid content in their diet was rich than the RDA.

Table 1: General Information of the Subject

Sr. No.	Parameters		Sindhi (N=50)		Muslim (50)	
1.	Educational Qualification	5-9	2	4	-	-
		S.S.C.	18	36	24	48
		H.S.S.C.	16	32	12	24
		Graduate	10	20	8	16
		Post Graduate	4	8	6	12
2.	Type of Family	Joint	6	12	8	16
		Nuclear	42	84	40	80
		Extended	2	4	2	4
3.	Size of Family	2-4	24	48	26	52
		5-7	22	44	20	40
		8-10	4	8	4	8
4.	Occupation	Employed	6	12	4	8
		Unemployed	44	88	46	92





Table 2: Anthropometric Measurements of the Subjects

Sr. No.	Parameters	Sindhi (N=50)	Muslim (N=50)
1.	Height (cm) Mean	158.32	157.2
	Range	144-164	148-168
	Standard Deviation	± 6.01	± 5.33
2.	Weight (kg) Mean	67.50	65
	Range	53-120	50-96
	Standard Deviation	± 16.91	± 11.65
3.	BMI (kg/m ²) Mean	27.02	26.15
	Range	21.37-39.02	20.22-45.28
	Standard Deviation	± 4.47	± 6.72
4.	MUAC (cm) Mean	30.9	30.77
	Range	25-40	22-38
	Standard Deviation	± 3.52	± 3.16
5.	Waist Circumference (cm) Mean	84.34	85.76
	Range	55-121	50-115
	Standard Deviation	± 17.7	± 12.94
6.	Hip Circumference (cm) Mean	104.32	107.4
	Range	73-141	80-132
	Standard Deviation	± 17.63	± 12.56
7.	Waist: Hip Ratio Mean	0.8	0.77
	Range	0.69-0.92	0.55-0.89
	Standard Deviation	± 0.06	± 0.066

Table 3: Mean Body Mass Index of the selected subjects

Sr. No.	Body Mass Index	Sindhi (N=50)		Muslim (N=50)	
		No.	%	No.	%
1.	Severe malnutrition	-	-	-	-
2.	Moderate malnutrition	-	-	-	-
3.	Mild nutrition	-	-	-	-
4.	Low weight	-	-	-	-
5.	Normal	24	48	32	64
6.	Overweight	16	32	12	24
7.	Obesity	6	12	6	12
8.	Extreme obesity	4	8	-	-





Table 4: Mean nutrient intake of the Adult Women from Sindhi
Community

Sr. No.	Nutrients	RDA	Mean Nutrient	Standard	Deficit/Excess
1.	Energy (kcal)	1900	1854.54	± 288.49	-2.39
2.	Protein (gm)	58.32*	44.26	± 9.37	-24.1
3.	Carbohydrates	--	220.7	± 50.67	--
4.	Fat (gm)	Visible	62.18	± 16.12	--
5.	Calcium (mg)	600	572.06	± 214.36	- 4.65
6.	Iron (mg)	21	12.26	± 2.75	-41.61
7.	Vit. C (mg)	40	143.61	± 50.38	259.02
8.	Folic acid (mg)	100	146.18	± 30.75	46.18

*RDA value of protein is calculated on the basis of IBW (Brocas Index).

Table 5: Mean nutrient intake of the Adult Women from Muslim
Community

Sr. No.	Nutrients	RDA	Mean Nutrient Intake	Standard Deviation	Deficit/Excess (%)
1.	Energy (kcal)	1900	1756.34	± 239.3	-7.56
2.	Protein (gm)	57.2*	54.71	± 13.43	-4.35
3.	Carbohydrates (gm)	--	208.62	± 53.49	--
4.	Fat (gm)	Visible 20	57.03	± 8.63	--
5.	Calcium (mg)	600	477.03	± 138.9	-20.49
6.	Iron (mg)	21	13.23	± 8.64	-37
7.	Vit. C (mg)	40	114.12	± 78.24	185.3
8.	Folic acid (mg)	100	151.5	± 53.64	51.5

*RDA value of protein is calculated on the basis of IBW (Brocas Index).

Conclusion:

The nutritional status of any community is dependent on many factors like education, health status, income, sanitary conditions; eating habits etc. the result of the study showed that the dietary intake of the adult women from Sindhi and Muslim community was high in fat and less in protein and other vitamins and minerals resulted in extreme obesity followed by overweight in many women. This is an indication of poor eating habits and lack of nutritional awareness among them. Many times





traditional customs and beliefs overtake the proper ideas of healthy eating but timely intervention is needed to avoid further health consequences.

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