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Assessment of nutritional status of adults of Trans: Yamuna area of Allahabad

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Abstract
The present study entitled "Assessment of Nutritional status of adults of trans Yamuna area of Allahabad" was carried out the following objectives- To assess the nutritional status of selected sedentary male and female, to find out the ditetary pattern of selected sedentary male and female, Trans Yamuna area of Allahabad City was selected purposively because of the convenience and good access to the area. Hence, regular visits could be made for authentic collection of data. A total two hundred respondents out of which 78 male and 122 female were selected randomly from Trans Yamuna area of Allahabad. The respondents were personally interviewed with the help of pretested interview schedule by visiting the respective selected areas. The Dietary intake was determined by 24 hours dietary recall method and the average nutrient intake was calculated and compared with RDA (ICMR, 2010). Out of total, 59 percent respondents were having normal BMI, 30 percent were having grade I obesity and only 10 percent were having grade II obesity the average nutrients intake of both male and female respondents was found less than the recommended RDA. The significant differences were found between the intake and RDA for calories, protein, fat, carbohydrates, calcium, iron, retinol and niacin. Out of 200 respondents, total 10 per cent respondents having arthritis, out of which 7.69 per cent were male and 11.47 per cent were female. In the same way, 11 per cent having cardiac disease, out of which 8.19 per cent were female and 15.38 per cent were male. 17 per cent respondents having thyroid, out of which 10.25 per cent were male and 21.31 per cent were female where as 22 per cent respondents having other health related problems, out of which 19.67 per cent were female having and 25.64 per cent female were male and 40 per cent of respondents having diabetes mellitus out of which 39.34 per cent were female and 41.02 per cent were there.

Keywords: sedentary adults, nutritional status, dietary intake, food frequency

Introduction
Man needs a wide range of nutrients which perform various function in the body. During adulthood nutrients are required for energy, for replacement of worn out tissue and maintenance of the body functions. Though there is no growth during adulthood protein is required for the replacement of worn out tissues. The nutritional requirement of other age groups is sometimes extrapolated from adult's requirement. Adults of all ages have different nutrition and physical activity needs as their lives and bodies change. A strong and healthy body can provide many benefits. As you age, maintain healthy habits is an important way to lower risk for diabetes, heart disease and hypertension. Make your food and beverages choices a priority and be physically active to feel and look better. Dietary patterns are defined as "the quantities, proportions, variety, or combinations of different foods and beverages in diets, and the frequency with which they are habitually consumed". According to the position statement issued by the American Dietetic Association, now called the Academy of Nutrition and Dietetics, a vegetarian diet is defined as "one that does not include meat (including fowl) or seafood, or products containing those foods. Although this is considered the standard definition, all researchers reporting the outcomes of vegetarian diets (Yokoyama *et al.*, 2015) [10] have not used it. Food and its component play an important role in regulation of salt and electrolyte profile of individuals, which may be one of the important regulation factors in the prevention of hypertension and its related morbidity. The vegetarian diets are rich in carbohydrate where as non-vegetarian diets are protein rich. The different type's food habits are also responsible for difference in electrolyte profile. The study was undertaken with following specific objectives; - to assess the nutritional status and dietary pattern of selected sedentary male and female (Bhat *et al.*, 2010) [1].

Materials & Methods
Trans Yamuna area of Allahabad city U.P. was purposively selected for the investigation as investigator was well acquainted with the area and people residing there. A total number of 200 respondents (female & male) aged 25-40 years were selected porposive randomly for the study by using random table. The data pertaining to the study according to the research problem, Pre-structured questionnaire was used for the collection of data from the respondents. The schedule was included the aspects which lead to the fulfillment of the objectives of the study. The interview schedule consisted of General profile, Anthropometric measurement (Srilakshmi, 2010), Dietary intake 24 hrs dietary recall method

(Swaminathan, 2003) [3] and clinical signs and symptoms of the respondents observed (Park, 2005) [6].
The data was collected and obtained statistically analyzed by using paired t-test. (Gupta and Kapoor, 2002) [4].

Results

The data collected and tabulated under the study are present with appropriate illustration and discussed in this chapter.

Table 1: Distribution of the respondents according to their general information.

S. No.	Particulars	Male n=78	%	Female n=122	%	Total % N= 200
1	Age(year)					
	25-35	26	33.33	30	24.59	28
	36-40	52	66.66	92	75.40	72
2	Education level					
	Illiterate	0	0	12	9.83	6
	High school	8	10.25	22	18.03	15
	Intermediate	12	15.38	8	6.55	10
	Graduate	24	30.76	60	49.18	42
	Post graduate	28	35.89	16	13.11	22
	Diploma	6	7.69	4	3.27	5
3	Type of family					
	Joint	34	43.5	58	47.54	46
	Nuclear	44	56.41	64	52.45	54
4	Occupation					
	Service	28	35.89	18	14.75	23
	Business	22	28.20	26	21.31	24
	Farming	16	20.51	0	0	8
	House Wife/ Non worker	12	15.38	78	63.93	45
5	Monthly Income					
	5,000-10,000	0	0	2	1.6	1
	10,000-15,000	4	5.1	0	0	2
	15,000-20,000	10	12.82	12	9.83	11
	>20,000	64	82.05	108	88.52	86

Table 1. Shows the general information of the respondents.

Age

Out of 200 respondents, in the age group 25-35 years, 33.33 per cent were males, 24.59 per cent were females, and in the age group 36-40 years, 66.66 per cent males and 75.40 per cent were females.

Education Level

Out of total males 7.69 per cent were having any other education, 10.25 per cent were educated up to high school, 15.38 per cent educated up to intermediate, 30.76 per cent were graduate and 35.89 per cent were postgraduates. In case of females 3.27 per cent were having any other education, 6.55 per cent were educated up to intermediate, 9.83 per cent were illiterate, 13.11 per cent were postgraduates, 18.03 per cent were educated up to high school and 49.18 per cent were graduate.

Type of family

The above data shows that 43.5 per cent male and 47.54 per cent female has belonged to joint families where as 52.45 per cent females and 56.41 per cent males belonged to nuclear family.

Occupation

Out of total 15.38 per cent were male did any other job, 20.51 per cent were male had agriculture as their occupation, 28.20 per cent were male belonged to business class and 35.89 per cent male were in service class. In case of female, 14.75 per cent were female in service class, 21.31 per cent were female belonged to business class and 63.93 per cent were female homemakers.

Monthly income

Maximum adults, i.e. 82.05 per cent male and 88.52 per cent females had an average monthly income of more than Rs 20,000 followed by 12.82 per cent male and 9.83 per cent females had an average monthly income between Rs 15000 - 20,000 followed by 5.1 per cent males and no female had monthly income between Rs 10,000 - 15,000 and 1.6 per cent female had monthly income between Rs 5000- 10,000 per month.

Table 2: Distribution of respondents according to their food habits and dietary pattern.

S. No.	Particulars	Male=78		Female=122		Total
1.	Food habits	N	%	N	%	N=200
	Vegetarian	22	28.20	34	27.86	28
	Non vegetarian	34	43.58	62	50.81	48
	Ova –lacto vegetarian	22	28.20	26	21.31	24
2.	Type of milk consumed					
	Whole milk	2	2.56	12	9.83	7
	Toned milk	36	46.15	48	39.34	42
	Cow's milk	40	51.28	52	42.62	46
	Any other powder milk	0	0	10	8.19	5
3.	Oils used for cooking					
	Mustard oil	28	35.89	54	44.26	41
	Refined oil	38	48.71	62	50.81	50
	Any other /olive oil	12	15.38	6	4.91	5
4.	Fast food consumption					
	Once a week	10	12.82	16	13.11	13
	Twice a week	30	38.46	84	68.85	57
	Once in a month	38	48.71	22	18.03	30
5.	Dietary pattern:					
a.	Brunch + Dinner	20	25.64	10	8.19	15
b.	Breakfast+ lunch +dinner	8	10.25	12	9.83	10
c.	Breakfast +lunch + evening tea+ Dinner	28	35.89	48	39.34	38
d.	Breakfast + lunch + evening tea dinner+ bed time	22	28.20	52	42.62	35
6.	Method of cooking					
	Boiling	6	7.69	22	18.03	14
	Steaming	0	0	11	9.01	6
	Shallow frying/ deep frying	54	69.23	57	46.72	56
	Baking / roasting	0	0	8	6.55	4
	Any other	18	23.07	24	19.67	21

Table 2 shows the food habits and dietary pattern of the respondents**.**

Food habits

Out of 200 respondents, 21.31 per cent females and 28.20 per cent males were ova lacto vegetarians, 27.86 per cent females and 28.20 per cent male were vegetarian and 43.58 per cent male and 50.81 per cent females were non-vegetarians.

Types of milk consumed

Out of 200 respondents, 2.56 per cent of males and 9.83 per cent females respectively consumed whole milk,46.15 per cent males and 39.34 per cent females consumed toned milk and 51.28 per cent males and 42.62 per cent females respectively were taking cow's milk whereas 8.19 per cent females were consumed powder milk.

Oil used for cooking

In the table 4.2 data shows that 5 per cent respondents were using olive oil / desi ghee and mustard along with refined oil, out of which 4.91 per cent were female and 15.38 per cent were male. In the same way 41 per cent respondents were using mustard oil for cooking out of which 35.89 per cent were male and 44.26 per cent were female whereas 50 per cent respondents were using refined oil out of which 48.71 per cent were male and 50.81 per cent were female.

According to Batra *et.al*., (2012), butter, ghee, dalda, coconut oil, palm oil are cholesterol rich and increase the risk of hypertension. The use of combination of cooking oils like sesame, groundnut, sunflower, rice bran, corn oil, etc. with coconut and palm oil maintained at minimum levels is beneficial for heart as well as maintaining a normal blood pressure.

Fast food consumption

The data indicates that 12.82 per cent males and 13.11 per cent females consumed fast foods once in a week, 18.03 per cent females and 48.71 per cent males consumed it once in a month, 38.46 per cent males and 68.85 females consumed it twice a week.

Dietary pattern

Out of 200 respondents, 8.19 per cent females and 25.64 per cent males followed type (a) dietary pattern, 9.83 per cent females and 10.25 per cent males followed (b) dietary pattern, 28.20 per cent males and 42.61 females followed (d) dietary pattern and 35.89 per cent males and 39.34 per cent females followed (c) dietary pattern.

Table 3: Average nutrient intake per day by adult's male respondents

Parameters	Energy (kcal)	Protein (g)	Fat (g)	CHO (g/d)	Calcium (mg/d)	Iron (mg/d)	Retinol (µg/d)	Niacin (mg/d)
Intake	2485.03	54.23	22.58	284.02	325.88	25.98	463.16	10.08
RDA	2220	60	25	333	600	17	600	16
Difference	-265.03	5.77	2.42	48.98	274.12	-8.98	136.84	5.92
t-value (cal)	36.13	12.6	16.33	11.11	7.51	9.38	8.43	4.88
t-table	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66

Table 3 shows the average nutrients intake by the males with references to energy, protein, fat, carbohydrate, calcium, iron, retinol and niacin. After comparing the average nutrients intake of male respondents with ICMR, RDA (2010) [5] it was observed that protein, fat, retinol, calcium and niacin intake was found less than the RDA. On applying t-test, significant differences were found between the intake and RDA for calories, protein, fat, carbohydrates, calcium, iron, retinol and niacin.

Table 4: Average nutrient intake per day by adult's female respondents

Parameters	Energy (kcal)	Protein (g)	Fat (g)	CHO (g/d)	Calcium (mg/d)	Iron(mg/d)	Retinol (µg/d)	Niacin (mg/d)
Intake	1923	44.37	16.98	398.1	428.31	17.81	463.85	7.68
RDA	1900	55	20	375	600	21	600	12
Difference	-22.54	10.63	3.02	-23.1	171.69	3.19	176.15	4.32
t-value (cal)	75.79	16.44	19.47	40.01	13.0	24.35	19.86	7.99
t-table	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96
Result	S	S	S	S	S	S	S	S

Table 4 shows the average nutrients intake by the females with references to energy, protein, fat, carbohydrate, calcium, iron, retinol and niacin. After comparing the average nutrients intake of female respondents with ICMR, RDA (2010) [5] it was observed that protein, fat, retinol, calcium, iron and niacin intake was found less than the RDA. On applying t-test, significant differences were found between the intake and RDA for calories, protein, fat, carbohydrates, calcium, iron, retinol and niacin.

Table 5: Health related complication as reported by the respondents.

Complications related to Health	Male = 78		Female =122		Total =200
	N	%	N	%	
Diabetes Mellitus	32	41.02	48	39.34	40
Cardiac Disease	12	15.38	10	8.19	11
Arthritis	6	7.69	14	11.47	10
Thyroid	8	10.25	26	21.31	17
Any other (stomach disturbance, body pain)	20	25.64	24	19.67	22

Table 5 shows that out of 200 respondents, total 10 per cent respondents having arthritis, out of which 7.69 per cent were male and 11.47 per cent were female. In the same way, 11 per cent having cardiac disease, out of which 8.19 per cent were female and 15.38 per cent were male. From the above data it is also clear that 17 per cent respondents having thyroid, out of which 10.25 per cent were male and 21.31 per cent were female whereas 22 per cent respondents having other health related problems, out of which 19.67 per cent were female having and 25.64 per cent female were male and 40 per cent of respondents having diabetes mellitus out of which 39.34 per cent were female and 41.02 per cent were there.

Conclusion

From the results, it is concluded that out of the average nutrients intake of both male and female respondents was found less than the recommended RDA. The significant differences were found between the intake and RDA for calories, protein, fat, carbohydrates, calcium, iron, retinol and niacin. Out of 200 respondents, total 10 per cent respondents having arthritis, out of which 7.69 per cent were male and 11.47 per cent were female. 11 per cent having cardiac disease, out of which 8.19 per cent were female and 15.38 per cent were male. 17 per cent respondents having thyroid, out of which 10.25 per cent were male and 21.31 per cent were female where as 22 per cent respondents having other health related problems, out of which 19.67 per cent were female having and 25.64 per cent female were male and 40 per cent of respondents having diabetes mellitus out of which 39.34 per cent were female and 41.02 per cent were there.

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