

A COMPARATIVE STUDY OF THE FOOD HABITS OF PROFESSIONALS IN SOFTWARE AND NON- SOFTWARE INDUSTRY

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ABSTRACT

The present study was conducted to study the food habits and dietary pattern of Software and non software professionals. One hundred Software and non software professionals were selected from Gurgaon towards the study. A group of 30 professionals were taken as control group, with similar age, educational qualification and having a minimum of 5 years of work experience. There was 50 percent representation of both males and females in control and experimental groups. Personal income of the IT and non IT respondents showed that majority had a monthly income in the range of Rs. 50000-100000 and the work duration of Software and non software professionals ranged from 8-12 hours, in some cases even above that. Food consumption pattern of the respondents indicated that most of the respondents were non vegetarians in both groups. Majority of the Software and non software professionals were meal skippers. Assessment of mean nutrient intake showed that among both groups, energy, protein and fat intake was well above RDA. There was significant correlation at 5% level between personal income and consumption of green leafy vegetables ($r=0.3254$), fruits and fruit juices ($r = 0.923$), milk and milk products ($r=0.2272$) and savoury foods (0.246) at 1% level.

Keywords : Software professionals, Food habits, Meal skipping pattern, Food preferences, Mean nutrient intake.

INTRODUCTION

The Software and non software population has become highly sedentary with related discomforts. There are innumerable evidences from literature for eye strains, back discomforts and hand and wrist problems. Above all they are extremely stressed out with the risk involved with time and target pressures. They are prone to diet and nutritional problems leading to overweight and obesity. Hence this study was attempted to assess the nutritional status and the dietary patterns of Software professionals in Gurgaon

METHODOLOGY

The objective of the study was to study the food habits and the dietary pattern of the professionals in industry.

Locale of the study

Cybercity, Gurgaon was purposively selected because it offers the largest employment to more than 10,000 professionals through its companies. Various companies of cybercity were chosen for the study.

Selection of respondents

In this study, 100 professionals were selected to form the experimental group, comprising of 50 males and 50 females, belonging to the age group of 30-40 years, with a minimum of 5 years

experience. They were selected at random from various units of cybercity, Gurgaon. A group of 30 respondents comprising of 15 males and 15 females were selected as the control group. The control group comprised of respondents from similar socio economic, educational and occupational background..

Variables selected for the study

- i. **Socio economic and personal characteristics of the respondents** : To collect information on Socio economics and personal characteristics of the respondents, details regarding religion, marital status and duration of office work, experience in occupation, family composition, personal income and family income were collected. A pre tested standardized schedule was framed for this survey and the information was collected by personal interview.
- ii. **Dietary particulars** : The major dietary particulars ascertained were food habits, food use frequency, food consumption pattern with respect to timings, meal skipping habit, food consumption from outside, habit of taking tea or coffee and food preferences and dislikes. All these were collected through the standardized schedule by interview method. The actual food and nutrient intake was assessed by the 24 hour recall method . The respondents were asked about the type of foods they had for breakfast, lunch, tea and dinner and the raw ingredients used for each of the preparation. Standard cups and saucers were used to aid the respondents to recall the quantities prepared and eaten. Nutrient intake was computed using the food composition tables-Nutritive value of Indian foods.

Data Collection

An interview schedule was prepared for data collection. This schedule was pre tested among professionals of Software industry. Based on this pre testing necessary modifications were made so as to ensure clarity and relevance.

Statistical tools used

The following statistical tools were applied for the analysis of tabulated data.

- a. Measures of central tendency
- b. Measures of relationship

RESULT AND DISCUSSION

The results of the present study is presented as a comparison between 2 groups i.e., Software professionals and non software professionals, belonging to similar age, educational qualification and socio economic backgrounds.

1. Personal and socio economic characteristics of respondents

There are 100 Software professionals, equally represented by males and females (50 each); and there are 30 non software professionals also comprised equally of 15 males and 15 females.

Age : It was observed that 63 percent of the group of Software professionals belonged to the age group of 30-35 yrs, while the remaining, 37 per cent belonged to the age group of 35-40 yrs. Similarly in the non software group 53 per cent of the group belonged to the age group of 30-35 yrs.

Religion : Majority of the respondents were observed to be Hindus (57 percent) among the Software professionals and non software professionals, followed by Christians and Muslims. Muslims formed only 4 per cent and 7 per cent of the 2 groups respectively. This agrees with the findings of Kerala Statistical Institute (7), that vast majority of the population of gurgaon is predominated by Hindus.

Work Experience : Work related health problems can be assessed only when the experience in this particular area of work is clearly identified. Here, when 70 per cent of the Software professionals had 5-10 years experience, in the non software group, only 53 percent fell into this group. Others had an experience of above 1 years. Kumar (8) too observes that generally this industry in India comprises of younger professionals because our country has got in intensively into this industry only since the past 2 decades.

Marital Status : In this study, married population formed majority of the sample: 70 per cent of Software professionals and 67 per cent of non Software professionals. Seven per cent of Software professionals and 6 per cent of non Software professionals were divorced. This is a reminder of the fact put forth that daily (9) the number of couples seeking divorce is on the rise with over 11,600 cases being filed in the various family courts in Delhi.

Family Size : Thirty seven percent and forty per cent of the experimental group and control group respectively belonged to nuclear families, 29 percent of Software professionals hailed from extended families and 23 per cent of non Software professionals came from extended families. This reveals that the concept of extended families is becoming more and more common in our society and joint family is fast disappearing. Extended families are rising owing to the need of grand parents for looking after children of working mothers.

Work Timings : Most of the respondents worked for 8-10 hours. While 17 percent of the Software professionals worked above 12 hours per day, only 3 per cent of non Software professionals worked for that duration. Software industry issues the employees a project and a deadline, so that the team can budget their time to finish within the allocated time. Hence as Ferguson (10) puts it time pressures are immense in comparison to other sectors.

Family Income : Since the respondents were selected from similar professional background, the income of Software professionals was not much higher than their counterparts. When 18 per cent of Software professionals earned a monthly salary of Rs. 75000 and above, 13 percent of non software professionals too earned in that range.

Around 29 percent of Software professionals earned in the range of Rs. 40,000-50,000, 30 percent of non Software professionals too earned that much. The family income of 26 per cent of Software professionals was above Rs. 2 lakhs. None of the non software families fell in this income range. Most of the other income groups were at par among both groups. Suparna et al., (11) too agrees that the phenomenal growth which the Software industry is witnessing has led to it being recognised as one of the highly paid industry and the skilled, qualified professionals are hardly able to meet the requirements of the industry.

Dietary Particulars

Food habits of the respondents : The distribution of lacto vegetarians, ovo vegetarians and non vegetarians in the 2 sectors were almost similar as evidenced in the table. Statistically, food habits and occupation did not seem to have any significant association with the kind of occupation. The consumption pattern revealed that 98 percent of subjects are non vegetarians.

Table 1 : Distribution of respondents based on food habits

Food habits	Soft Ware Industry			Non Soft ware Industry		
	Male	Female	Total	Male	Female	Total
Lacto Vegetarians	10 (20)	8 (16)	18 (18)	2 (13)	4 (27)	6 (20)
Ovo Vegetarians	4 (8)	9 (18)	13 (13)	2 (13)	2 (13)	4 (13)
Non Vegetarians	36 (72)	33 (66)	69 (69)	11 (73)	9 (60)	20 (67)
Total	50	50	100	15	15	30

 $\chi^2=2.28$ $\chi^2=0.87$

Frequency of use of various food stuffs : The daily used food were cereals (mainly rice), vegetables and milk. Meats egg and fish were never used by 18 per cent of the Soft ware professionals. Similarly paneer was never used by 25 per cent of this group. Ice creams were consumed on a regular basis by 80 per cent of the group. Sweets were consumed once in 2-3 days or 3-4 days by 27 per cent and 20 percent of the 2 groups Junk food like wafers, carbonated drinks, chocolates etc were consumed on a regular basis by 74 per cent of the group. Similar food consumption were also reported by Popkin (13) among working urban population.

The analysis of frequency of use of foodstuffs by non Software professionals revealed that the daily used foods were milk and vegetables. Probably women owing to religious fasts did not consume cereals on certain days. Forty three per cent of the non Software professionals consumed ice cream on a weekly basis. When 20 percent of the respondents consumed non-veg regularly on a daily basis, 40 per cent consumed it more than twice a week. Sweets were never consumed by fifty six per cent. But savouries were consumed more or less regularly by 70 per cent of the group. Junk foods were consumed more or less regularly by 23 percent of this group. Taskar et al (14) observed that young adults consumed more servings of fruits and fruit juices.

Table 2: Frequency of use of various food stuffs by Software professionals (N=100)

Food Items	Daily	More than twice a week	More than thrice a week	Weekly	Fortnightly	Monthly	Occasionally	Never	Total
Cereals & Cereal Products	00								100
Pulses	5	3	11	71	-	-	-	-	100
Leafy Vegetables	2	12	13	7	-	-	-	-	100
Roots & tubers	3	40	57	-	-	-	-	-	100
Other vegetables	100	-	-	-	-	-	-	-	100
Fruits/fruit juice	-	17	59	12	11	1	-	-	100
Milk	100	-	-	-	-	-	-	-	100
Milk products									
Curd	49	37	11	2	1	-	-	-	100
Paneer	-	14	11	9	14	15	12	25	100
Ice Cream	-		13	61	8	4	4	4	100
Meat	-	1	1	10	12	6	2	18	100
Egg	-	3	1	9	7	9	3	18	100
Fish	21	1	5	10	11	12	2	18	100
Coconut	57	2	39	2	-	-	-		100
Ground nut/ Cashew nut	6	-	12	52	11	3	8	8	100
Sweets	0	27	20	42	2	3	0	6	100
Savouries	43	17	22	3	7	-	1	7	100
Junk food	-	2	3	69	7	7	0	12	100
Baked foods	-	30	32	10	9	8	9		100

Table 3: Frequency of use of various food stuffs by non Software professionals (N=30)

Food Items	Daily	More than twice a week	More than thrice a week	Weekly	Fortnightly	Monthly	Occasionally	Never	Total
Cereals & Cereal Products	27 (90)	-	3 (10)	-	-	-	-	-	30
Pulses	-	-	9 (30)	21 (70)	-	-	-	-	30
Leafy Vegetables	-	-	8 (27)	22 (73)	-	-	-	-	30
Roots & tubers	-	7 (57)	3 (43)	-	-	-	-	-	30
Other vegetables	30 (100)	-	-	-	-	-	-	-	30
Fruits/fruit juice	-	7 (57)	3 (43)	-	-	-	-	-	30
Milk	30 (100)	-	-	-	-	-	-	-	30
Milk products									30
Curd	4 (13)	24 (80)		-	-	-	-	2 (7)	30
Paneer	-	-	-	11 (37)	8 (27)	2 (7)	1 (3)	8 (27)	30
Ice Cream	-	-	-	13 (43)	-	6 (20)	4 (15)	7 (23)	30
Meat	-	-	-	12 (40)	4 (13)	2 (7)	2 (7)	0 (33)	30
Egg	-	4 (13)	-	4 (13)	3 (10)	1 (3)	2 (7)	16 (54)	30
Fish	6 (20)	12 (40)	2 (7)	2 (7)	-	1 (3)	0	7 (23)	30
Coconut	4 (80)	(10)	(7)	-	-	-	-	1 (3)	30
Ground nut/ Cashew nut	-	-	-	12 (40)	11 (37)	-	2 (7)	5 (17)	30
Sweets	1 (3)	2 (7)	1 (3)	5 (17)	2 (7)	-	2 (7)	17 (56)	30
Savouries	-	7 (23)	9 (30)	5 (17)	5 (17)	4 (13)	-	-	30
Junk food	-	-	-	7 (23)	4 (13)	-	2 (7)	7 (23)	30
Baked	-	2 (7)	3 (10)	7 (23)	4 (13)	-	12 (40)	2 (7)	30

Regularity of Consuming meals : Regular meal times is an essential determinant of sound health. Today's work demands and work overloads could be a prominent factor in affecting punctuality in food timings. Thus a critical assessment of timings of meals was done in this study. The regularity in timings for consuming meals of the respondents were analysed. Eighty four per cent of the male software respondents and 58 per cent of female respondents did not have regular timing for breakfast. The corresponding figure for non Software industry were 10 percent and 20 percent respectively. When 84 per cent of Software professionals on the whole were sent to take lunch without a fixed timing 57 percent of non Software professionals were also seen to follow the same trend. Dinner too was not had at regular timings by 60 percent of Software professionals and 37 percent of non Software professionals. Kumar (15) has rightly observed that for professionals, regularity of meal times is rather difficult to observe, hence they are ready victims of indigestion.

Table 4: Regularity of consuming meals

Meal	Regular timings				Irregular timings			
	Software N = 100		Non Software N = 30		Software N = 100		Non Software N = 30	
	M	F	M	F	M	F	M	F
Break Fast	8 (16)	21 (42)	12 (80)	9 (60)	42 (84)	29 (58)	3 (10)	6 (20)
Lunch	2 (4)	4 (8)	8 (53)	5 (33)	48 (96)	36 (72)	7 (47)	10 (66)
Tea	11 (22)	8 (16)	15 (100)	11 (73)	39 (78)	42 (84)	-	4 (27)
Dinner	17 (34)	21 (42)	7 (47)	12 (80)	31 (62)	29 (58)	8 (53)	3 (20)

Meal Skipping pattern : Devine et al (16) has pointed out that long working hours and dual responsibilities also means less time for participating in family meals. Hence the habit of skipping of main meals were also analyzed. Male software professionals are found to skip their breakfast (54%), more than their female counterparts (36%). While in the non software sector, women (40 percent) predominated in this matter than men (20 per cent). Twenty six per cent of software professionals skipped their lunch and 7 per cent of them skipped dinner very often. When 13 percent of non software professionals skipped lunch and 20 per cent skipped dinner. Evans et al (17) too observed in their study that one third of adults did not have regular timings for breakfast due to lack of time and low levels of hunger. Lack of time was observed to be the main reason for skipping of meals among 47 per cent Software professionals and 30 percent of non software professionals. Religious fasts was the reason for skipping in 2 per cent of non software professional; Dieting was the reason claimed by 3 per cent of software professionals and 5 per cent of non software professionals.

Moy et al (18) reported after a study among professionals it was concluded that, lack of time and oversleeping were the main reasons for skipping of meals. Mao et al (19) observed in their study on obese person that adults who skipped meals tended to eat more in the rest of the meals.

Ninety percent of the software professionals were consuming lunch from the canteen, while the corresponding figure for non software professionals was 27 percent. Tea was consumed invariably by both type of professionals from outside. However dinner was mostly consumed at home by most of the professionals.

Seubsman et al (20) pointed out from their study on youth that, 50 percent of them consumed fast food regularly, mainly because of modern life style, social events and markedly because of convenience and taste.

Consumption of tea and coffee

Only four per cent of software professionals and 23 percent of non software professionals did not have the habit of taking tea or coffee. Thirty per cent of the male software professionals and 6 percent of female software professionals consumed up to 5 cups of this stimulating beverage per day. While 20 percent of male non software professionals and 27 percent of female non software professionals showed similar trends. Varun et al (21) has concluded from his study that, tea makes up 94 per cent of out-of-home per capita hot drinks consumption and almost 70% of in house consumption.

Table 5 : Consumption of tea or coffee

Software Professionals N = 100	Frequency per day						Total
	0	1	2	3	4-5	Above 5	
M	-	4 (8)	6 (12)	21 (42)	15 (30)	4 (8)	50
F	4 (8)	1 (2)	16 (32)	26 (52)	3 (6)	-	5
Non Software professionals N = 30							
M	-	2 (13)	2 (13)	2 (13)	3 (20)	5 (33)	15
F	-	4 (27)	4 (27)	3 (20)	4 (27)	-	15

Preference and non preference of various foods

With a significant shift in demographic profile in favour of younger population, increasing surplus incomes and change in socio economic environment, food consumption pattern are bound to change in favour of processed foods which are convenient and of good quality. The food preferences elicited from the respondents are summarised as follows :

Non vegetarian foods were preferred most by 67 percent of software and 37 percent of non software professionals. Spicy foods were given top priority by 51 per cent and 40 percent of software and non software professionals respectively.

Vegetarian foods were preferred most by 26 percent of the software professionals and 23 percent of non software professionals. Sweets were preferred most by 31 percent of software professionals and 23 percent of non software professional, while savouries were the best preferred foods by 43 percent of software professionals and 30 percent of non software professionals.

Goyal and Singh (22) too have pointed out that the young Indian consumer has a passion for consuming spicy foods especially from fast food joints. The consumption of heavy snacks could be a means to put off hunger and skip the main meal.

Analysis of dislikes with regard to food were analyzed. It was surprising to note that vegetables were disliked extremely by adult population; 13 percent of software professionals and 10 per cent of non software professionals. Non vegetarian foods were disliked by 18 per cent of software professionals and thirty three per cent of non software professionals. Extreme dislikes for ice cream too were observed in 10 per cent of software professionals and 17 percent of non software professionals. The dislike towards vegetarian foods were observed by Morland and Filomina (23), in their study on urbanite food habits.

Mean nutrient intake of the respondents

Nutrient adequacy in the diet is of paramount importance to physical and mental health. To get an overall picture of nutritional adequacy, the data was analyzed. The summarized data is presented in the following tables.

Table 6 : Mean Nutrient intake of male respondents

Group	Nutrients	Mean intake	RDA	% of RDA met
Software	Energy (kcal)	3568	2425	147.1
Non software	"	3291	2425	135.7
Software	Protein	67.6	60	112.6
Non Software	"	68.1	60	113.5
Software	Fat	39.8	20	199
Non Software	"	38.2	20	191

Table 7 : Mean Nutrient intake of female respondents

Group	Nutrients	Mean intake	RDA	% of RDA met
Software	Energy (kcal)	1979	1875	105.57
Non software	"	1995	1875	106.47
Software	Protein	66.7	50	133.4
Non Software	"	69.5	50	139.0
Software	Fat	32.1	20	160.5
Non Software	"	33.5	20	167.5

The mean nutrient intakes were all higher than RDA in both groups. Mean intake of energy and fat were generally higher in males than females. The percentage of RDA of fat met was as high as 199 percent for male Software professionals and 191 percent for non Software professionals. The percentage of RDA met for male Software professionals with respect to calories was 147 percent, while for non software professionals it was 135.7 percent. The corresponding figures for women software and non software professionals were 105.5 per cent and 106.4 percent. The major sources of energy were observed to be rice, fruit juices, milk products and coconut. Higher calorie consumption was observed in males.

High protein intake may be due to liberal intake of animal foods in the diet. A study by Krishnapriya (2007) (24) also observed that among IT professionals the intake of nutrients was higher than RDA. The high intake could be the reason for the inclination towards obesity seen in majority of the youngsters studied. According to NNMB (25) intake of nutrients like protein, energy, total fat and riboflavin increased with increase in per capita income. Singh et al (26), also found that in urban population there is gradual increase in protein and calorie consumption from lower consumption levels to higher levels over the decades.

Inter correlation analysis was conducted to study the effect of socio economic parameters on dietary variables. Some notable findings were that the daily work duration was positively and significantly influencing consumption of green leafy vegetables ($r=0.4217$), fruit juices ($r=0.3582$). Experience in job was positively and significantly affecting fruit and fruit juice intake ($r=0.2436$). There was significant correlation at 5% level between personal income and consumption of green leafy vegetables ($r=0.3254$), fruits and fruit juices ($r=0.1923$), milk and milk products ($r=0.2272$) and savoury foods (0.246) at 1% level. Family income was positively correlated with consumption of savouries at 5% level ($r=0.1875$). Energy intake was positively associated with consumption of junk foods.

With higher income and lack of time, money spent for baked foods, milk products, processed foods, sweets and savouries are generally on the rise. This scenario is a signal of unhealthy consequences. The need of the hour is to impart Nutrition education to the professionals and also teach them stress management techniques.

REFERENCES

- 1) Agarwal NM and Thite M. Human resource issues challenges and strategies in the Indian Software industry. *Intl. J. of Human Resources Development & Management*, 2003; 3.
- 2) National Software Directorate, Business opportunities in India. 2008, Ireland Merrion hall.
- 3) Sathyamurthy S. Lifestyles can lead to obesity. *Times of India*. 22 Sept. 2004.
- 4) Prasanna KB. The software industry in India. Gender related issues, New horizons of family Community Science. Felicitation volume. Trivandrum Kerala University Cooperative press. 2008. p: 36-45.
- 5) Keith K. Computer systems for occupational safety and health. 2007.
- 6) NIN. Nutritive value of Indian foods. National Institute of Nutrition. 1989. Vol I
- 7) Kumar N. Indian software industry development. International and National Perspective. Economic and political weekly. Sameeksha Trust Publications, Mumbai 2001
- 8) Parvathy SN. *Times of India*. June, 2012
- 9) Ferguson S. Time pressures of software professionals, *J. of Indep. Studies & Research*. 2009; 7(1) : 3-14.
- 10) Suparna K. Sharma AK, Khandekar J. Occupational health problems and role of ergonomics in IT professionals in National capital region. *Indian J of Occupational & Environmental Medicine*. 2005; 9(3) : 111.
- 11) Popkin BM. Water and food consumption pattern of US adults from 1991-2001. *Obes. Res*. 2001; 13(12) : 2146-52.
- 12) Taskar DM, Nicholas TA, Yang SJ. Does food group consumption vary by differences in socio economic, demographic and lifestyle factors in young adults 2007; *J. Am. Diet. Ass.* 107(2):223-34.
- 13) Kumar H. Emerging new risk factors for coronary arterial diseases. *Ind. J of Cardiology*. 2010; 3:53-56.
- 14) Devine CM, Farella T, Blake C, Wethington E. Working condition and food choice coping strategies of employed parents. *J. of Nutrition Education & Behaviour*, 2009; 48(5) : 365-370.
- 15) Evans K, Emily K, Dauna S, Mare J Michael IG, Davis N. Association of breakfast skipping with visceral fat and insulin indices in overweight youth. *Obesity* 2009; 193-81.
- 16) Moy FM, Johari S, Ismail Y, Mahad R. Breakfast skipping and its associated factors a study among adults in a public university at Kuala Lumpur. *Malaysian J of Nutrition* 2007; 15 (2) : 164-74.
- 17) Mao YS, Bertone EP, Reed GR, Herbert R, Merriam PA, Dikine IS. Association between eating patterns and obesity. *Am. J of Epidemiology* 2003; 58 : 85-92.
- 18) Seubsman N, Kelley Y, Sleigh A. Cultural resistance to fast food consumption. A study of youth in north east Thailand. *Ind J of Consumer Studies*. 2009; 33(6) : 65-66.
- 19) Varun TC, Kerutagi MG, Basavaraja H, Ashalatha KU. Consumption pattern of tea and coffee in Karnataka. *Karnataka J. Agric Sci*. 2008; 22(4) 827-28.
- 20) Goyal A, Singh NP, Consumer perception of fast food in India, An exploratory study, *Bev. Fd. J*. 2007; 109(2) : 182-95.
- 21) Morland LK, Filomina S. Disparities in the availability of fruits and vegetables between variably segregated urban neighbourhood. *Pub, Health* 2008; 1: 1481-89.
- 22) NNMB. National nutrition monitoring bureau. Diet and nutritional status of rural population, NIN. Osmania, Hyderabad, 2002.