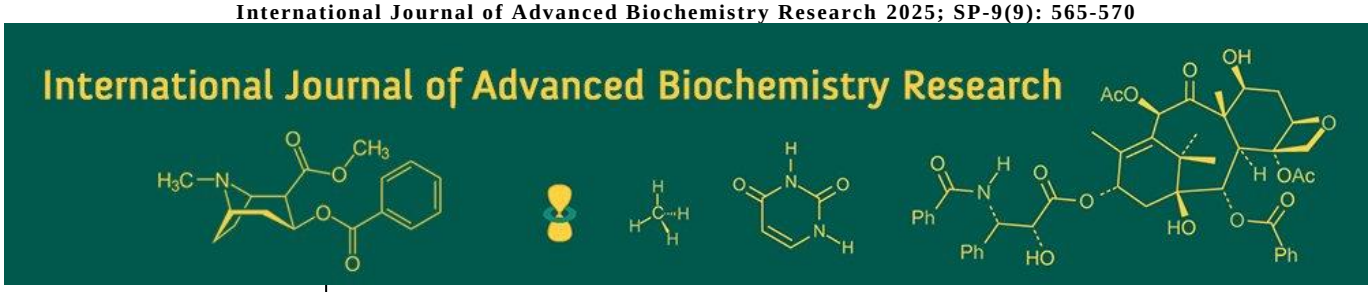

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Health, morbidity and life style status of patients suffering from chronic disorder

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Abstract
The present study was undertaken to study the Health and nutritional profile of patients suffering from chronic disorders who were attending three different systems of medicine viz., allopathy, ayurveda and naturopathy. The data was collected from 245 respondents (Allopathy-105, Ayurvedic-70 and Naturopathy-70) using structured and pre tested interview schedule. The collected data was analyzed using appropriate statistical tools. The results of the study revealed that, majority of the patients were males (63.7 percent) and Nearly 42 percent of them were in the age group of 41-50. Highest percentage of respondents were graduates and Greater percentage (52.00) of them belonged to nuclear family and monthly income was in the range of Rs. 10.000 to 15,000. with respect to dietry pattern, majority (71%) of respondents were non vegetarians followed by vegetarians (29.40%). with regard to meal pattern, early morning meal was invariably coffee in all the three groups except in case of diabetics who consumed coffee without sugar and cereals were the main staple in their diet irrespective of the disease condition. Majority of the respondents ranging from 64.0 to 89.0 percent in the three groups studied belonged to sedentary type of work followed by moderate type of work (23.0%). Sleeping pattern of respondents presently being followed and the duration of sleep revealed that around 50.0 percent of them had good sleep. The pooled data indicated that, higher percentage of (52.2%) subjects were alcoholics compared to the habit of smoking (47.8%) prior to disease. Combined pool data revealed that 3.0 to 84.0 percent of subjects exhibited traits like efficient, alert, competent and hostile. Among the groups, the different stress types like, general stress, house hold work stress and marital stress of subjects the percentage ranged from 28.60 to 42.80. High percentage of (59.00) subjects had discoloured hair followed by subjects with normal skin (56.10). Very few subjects (0.90%) expressed having had angular stomatitis and red and raw tongue.

Keywords: Dietry, life style, morbidity, stress

Introduction
Chronic disorders is a progressive disorder with several factors influencing the rate of progression of the diseases such as age, sex, and genetic profile underlying pathological immune status of the host and in individual cases, are some of the factors that determine the progress of the diseases. The chronic disorders are obesity, hypertension, diabetes mellitus, cardio vascular disease, renal failure and cancer etc. Chronic diseases are prolonged and are rarely cured completely. Chronic illness has a profound effect on the physical, emotional and mental wellbeing of individuals, often making it difficult to carry on with daily routine and relationships.

Modernization, change in lifestyle, stress and strains, improper eating habits, faster pace of life, less physical exercise etc., are creating conditions that affect the health of people leading to chronic disorders. In these circumstances, both in the advanced countries and in the metropolitan cities of the India, with the changing life style and the normal traditional pattern of food become inappropriate. This is considered to be one of the basic reasons leading to food related health problems (Chandrasekhar and Acharya., 1989) [2]. India is referred as the diabetic paradise of the world, in view of the high prevalence of diabetes mellitus in the country. India stands first rank in the world with three crores diabetic patients followed by china and USA. By 2030 India will have 79.4 million diabetics. (Anita et.al., 1995) [1].

Proper diet is the key to good health and vigour. Sensible and healthy food habits right from childhood coupled with good life styles can not only delay the occurrence and increase the life span but also add to the quality of life.

Today hypertension, diabetes mellitus and cardio vascular disease have emerged as the most important causes of premature disability and death all over the world.

Hence, considering the steady increase in type II diabetes mellitus, coronary heart disease (CHD), hypertension and obesity in India, during the last two to three decades and if the present trend continues these diseases may well become the major public health problems in the country. In view of the above facts, the present study was under taken to know the health, morbidity and life style status of patients suffering from chronic disorder.

Materials and Methods

The study was conducted on subjects who were attending three different systems of medicine, allopathy, ayurveda and naturopathy. For the detailed study, 105 subjects with allopathic treatment, 70 subjects each from Ayurvedic and naturopathy were constituted including both sexes. The sample size of CVD subjects under Ayurvedic and naturopathy systems were not available under these systems. Hence, the total sample size under three systems including both the sexes was around 245. A detailed interview schedule was formulated to elicit the information on various aspects related to chronic disorders, in consultation with nutrition experts, doctors and statistician. The schedule was modified after pre-testing. the data collected was analyzed using appropriate statistical tools like percentage, mean, stand deviation, chi square test, t test, correlation and regression etc.

Results and Discussion

Demographic and socio economic profile of subjects

The data collected on the demographic and socio-economic profile of 245 subjects is presented in Table 1.

Demographic profile of subjects indicated that males constituted nearly 42.0 percent of subjects suffering from chronic disorders. They were in the age group of 41-50 years. The highest percentages of respondents were graduates and greater percentage of subjects belonged to nuclear family. About 40.0 percent of these subjects had a total family income in the range of Rs. 10,000-50,000. These disorders were highly prevalent among population having higher income and leading sedentary life style, as per the findings of Radhika and Kowsalya (2002) [4]. The subjects in the age groups between 40-60 years of both sexes having diabetics enjoyed a sedentary life style. And also similar findings were observed by Mehta *et al*., (1989) [2], who reported that hypertension and hypercholesterolemia are common complications in both the middle income group and high income group diabetics.

Table 1: Demographic and Socio-economic profile of subjects

N=245

Characters	Category	Respondents	
		Number (N)	Percentage (%)
Age (yrs)	41-50	104	42.4
	51-60	80	32.7
	61-70	61	24.4
Gender	Male	156	63.7
	Female	89	36.3
Education	Illiterate	17	7.0
	Schooling	82	33.5
	PUC	26	10.5
	Graduation	97	40.0
	Post graduation	23	9.4
Religion	Hindu	226	92.2
	Muslim	9	3.7
	Christian	10	4.1
Income (Rs per month)	Below 10,000	83	34.0
	Rs.10,000-15,000	98	40.0
	>15,000	64	26.2
Type of family	Nuclear	127	52.0
	Joint	78	32.0
	Extended	40	16.3
Age wise distribution of family members (yrs)	Below 13	141	11.1
	13-20	158	12.4
	21-25	170	13.3
	Above 25	549	43.2
	≥55	254	20.0
Family size	3-4 members	109	44.5
	5-6 members	83	34.0
	>6 members	53	21.6

Dietary pattern of subjects

The dietary pattern of subjects is depicted in Table 2. Majority (71%) of subjects were non vegetarians followed by vegetarians (29.4%), however majority of subjects followed three meal pattern a day (98 percent), a small percentage of about two percent had four meal pattern.

Table 2: Dietary pattern of selected subjects

(n=245)

Dietary pattern	Frequency	Percentage (%)
Type of meal		
Vegetarian	72	29.4
Non-Vegetarian	173	70.6
Meals per day		
Three meals	239	97.6
Four meals	6	2.4

Life style pattern of selected subjects

Lifestyle pattern has a greater impact on the development and progression of many chronic disorders. Current life style pattern indicating type of work, sleeping pattern and duration of sleep are depicted in Table 3. This table indicates that majority of the subjects ranging from 64.0 to 89.0 percent in the three groups studied belonged to sedentary type of work followed by moderate type of work (23.0%), there were no subjects doing heavy work in I and II groups. Among three kinds of work surveyed in different systems of treatment, the mean data obtained were found to be statistically significant (X^2=17.60*).

Sleeping pattern of subjects presently being followed and the duration of sleep revealed that around 50.0 percent of them had good sleep and similar percentage had disturbed sleep in the three groups studied and duration of sleep was reported to be around or less than seven hours in majority of the subjects. There was no statistical significance among the sleeping pattern and duration of sleep in the three groups studied.

These results are in accordance with the work conducted by Radhika and Kowsalya (2002) [4].

Meal pattern

Meal pattern of respondents suffering from chronic disorders is presented in Table 4.

Early morning meal was invariably coffee in all the three groups except in case of diabetics who consumed coffee without sugar. Diabetics had either wheat grass juice/coconut water/bitter gourd juice in their diet. As can be seen from the table cereals were the main staple in their diet irrespective of the disease condition and it is used in different forms after applying various processing methods. However, consumption of ragi and wheat products were found to be high in diabetic subjects.

Previous life style pattern of the subjects

Life style pattern which was practiced prior to the occurrence of disorder and duration is presented in Table 5.

The pooled data indicated that, higher percentage of (52.2%) subjects were alcoholics compared to the habit of smoking (47.8%) prior to disease, these subjects were either chronic alcoholics or smokers. However, the mean data were found statistically non-significant. The duration of more than15 years of alcoholism were high in 36.0 percent followed by 11-15 years at 11.0 and 6.0 percent at less than 10 years. The mean data was found to be statistically non-significant. As far as the habit of smoking was concerned, similar pattern was observed i.e., higher percentage (30.6) were found to have more than 15 years followed by 11-15 years (11.0%) and less than 10 years was 6.1per cent. When the data were subjected for X^2-test of significance, the results indicated significant difference observed in the duration of smoking among the three groups of the subjects studied.

The statistical data obtained with respect to life style pattern of subjects was supported by result findings of Toranagatti (1995) [5], Radhika & Kowsalya (2002) [4] and Ebrahim *et al*., (2006) [3].

Though the literate subjects were aware of the fact that consumption of alcohol and nicotine are injurious to health they were not willing to quit or reduce as they were already addicted. Smoking is responsible for high prevalence of mortality and morbidity. The risk of diabetes is proportional to quantity of nicotine consumed per day. Long term smoking increases dependence on blood glucose for nicotine. High alcohol consumption may underlie the association between blood cholesterol and increased risk of hemorrhagic stroke.

Table 3: Current life style pattern of respondents (%)

Indicators		GI (n=105)		GII (n=70)		GIII (n=70)		Combined (n=245)		χ^2 Value
		N	%	N	%	N	%	N	%	
(A)	**Type of work**									
	Sedentary	93	88.6	49	70.0	45	64.3	187	76.3	17.601**
	Moderate	12	11.4	21	30.0	24	34.3	57	23.3	
	Heavy	-	-	-	-	1	1.4	1	0.4	
(B)	**Sleeping pattern**									
	Good Sleep	59	56.2	32	45.7	33	47.1	124	50.6	2.316 NS
	Disturbed sleep	46	43.8	38	54.3	37	52.9	121	49.4	
(C)	**Duration of sleep**									
	≤ 7ours	74	70.5	56	80.0	58	82.8	188	76.7	7.832 NS
	8 hours	25	23.8	14	20.0	11	15.7	50	20.4	
	≥ 9 hours	6	5.7	-	-	1	1.4	7	2.8	

Table 4: Meal pattern of the respondents

Meal pattern	Group I			Group II		Group III	
	Hypertension	Diabetes mellitus	Cardio vascular disease	Hypertension	Diabetes mellitus	Hypertension	Diabetes mellitus
Early Morning 6:00to7:00 am	Coffee	Coffee (with out sugar) wheat grass juice	Coffee Tea	Coffee Tea Horlicks Wheat grass Juice	Coffee, Tea (without/less sugar) wheat grass juice	Coffee Coconut water	Bitter gourd Juice wheat grass juice
Break-Fast 8:00 to 9:30am	Chitranna Tomato-Rice Idli Dosa Chapathi Coconut chutni Vada Dhal curry Poori Tea Milk	Ragi ganji Idli Dosa Upma Methi Rice Bread Coconut Chutni Chapathi Coffee Milk	Upma Lemon Rice Idli Vada Dosa Roti (Jowar) Groundnut Chutni Coconut Chutni Chapathi Coffee	Idli Dosa Ghee Rice Tomato Rice Chitranna Coconut Chutni Vegetable Curry Coffee Milk	Ragi Roti Chapathi Idli Dosa Coconut Chutni Vegetable Curry Coffee Tea	Upma Bread Jam Egg white Dosa Idli Tomato Rice Coconut Chutni Fruits	Dry nuts Chapathi Upma Curry (veg) Idli Coconut Chutni Fruits Milk
Mid-Morning 11:00to12:00am	Tea Coffee	Coffee Badam Milk	Tea Badam Milk	Tea	Tea Coffee(without sugar)	Coffee Fruit juices (Seasonal)	Fruit juices
Lunch 1:00to2:30pm	Chapathi Rice Dhal curry + (seasonal vegetables) Greens palya Chicken fry Mutton curry Curd Butter milk Banana	Chapathi Ragi ball Rice Sambar + (Seasonal vegetables) Butter milk Greens Palya Chicken fry Curd	Ragi ball Chapathi Rice Sambar(dhal) Chicken Curry Butter milk Seasonal Fruits	Chapathi Poori Rice Sambar (Seasonal veg) Greens palya Chicken curry Curd Butter milk Banana	Chapathi Ragi ball Rice Palya (veg) Greens Sambar Greens palya Seasonal Fruits	Rice Chapathi Roti(Jowar) Sambar (veg) Palya (veg) Butter milk Chicken fry Mutton curry Fruits Curd	Chapathi Ragi ball Rice Curry (veg) Vegetable salad Sambar (Dhal) Greens palya Butter milk Egg white Chicken Fruits
Tea and snacks 4:30to5:30pm	Tea Coffee Fried items	Milk Tea (Without/less sugar) Biscuits	Coffee Tea Biscuits	Coffee Tea Biscuits Fried items	Tea (without sugar)	Coffee Fruit Juices	Fruit juices Carrot juice Coffee (without sugar)
Dinner 8 :30to9 :30	Ragi ball Rice Sambar (veg) Sprouted Pulses Sambar Chicken fry Mutton curry Egg Banana	Chapathi Ragi ball Rice Sprouted Pulses Sambar Dhal curry Greens Sambar Egg Chicken Fish Seasonal Fruit	Chapathi Ragi ball Rice Roti (Jowar) Sambar (Veg.) Ground nut Chutni Greens Sambar Fish fry curry Chicken Curry Egg white Milk	Chapathi Rice Sambar (Dhal) Palya (Veg.) Egg Chicken fry Mutton curry Fish fry (Occ) Seasonal Fruit	Chapathi Roti (Jowar) Ragi ball Rice Sambar (Veg.) Sprouted Pulses Sambar Chicken Fish Butter milk Curd	Chapathi Roti(wheat flour) Rice Curry (Veg.) Palya (Veg.) Sambar (greens) Egg Chicken curry Fish fry Mutton curry Milk Fruits	Chapthi Roti(wheat flour) Ragi ball Rice Sambar (Veg.) Sprouted Pulses Sambar Salad (Veg.) Greens playa Egg Curds Chicken fry Fish Fruits

Type of personality

Type of personality is considered to be a major factor influencing the occurrence of chronic disease. Among the two types of personality, type-A personality appear to have pronounced impact on the occurrence of chronic disorders as compared to type-B personality, (Table 6). Combined pool data revealed that 3.0 to 84.0 percent of subjects exhibited traits like efficient, alert, competent and hostile. In type-B personality traits scored lower included, placid (5.7%), unflappable (6.1%) easy going (18.0%) and non competitive (24.0%). When the data of type of personality (type-A and type-B) were subjected for X^2-test of significance, the results indicated there was no statistical difference.

Table 5: Previous life style pattern of the subjects (%)

Personal Habit	Group I (n=105)		Group II (n=70)		Group III (n=70)		Combined (n=245)		χ^2 Value
	N	%	N	%	N	%	N	%	
Alcoholic	51	48.6	35	50.0	22	31.4	108	44.1	1.315 NS
Smoking	52	49.5	37	52.9	15	21.4	104	42.4	
A. Alcoholic (Duration)									
≤ 10 years	5	4.8	5	7.1	4	5.7	14	5.7	
11-15 years	8	7.6	8	11.4	-	-	16	6.5	6.458 *
15 + years	38	36.2	22	31.4	18	25.7	78	31.8	
B. Smoking (Duration)									
≤ 10 years	2	1.9	3	4.3	2	2.9	7	2.9	
11-15 years	9	8.6	7	10.0	1	1.4	17	6.9	2.876 NS
15 + years	41	39.0	27	38.6	12	17.1	80	32.7	

NS : Non Significant
* Significant at 5% level

Table 6: Personality type of subjects

Aspects		GI (n=105)		GII (n=70)		GIII (n=70)		Combined (n=245)		χ^2 Value
	Type of personality*	N	%	N	%	N	%	N	%	
	Type A									
1	Alert	75	71.4	58	83.0	54	77.1	187	76.3	
2	Competent	65	62.0	53	75.7	57	81.4	175	71.4	
3	Efficient	80	76.1	61	87.1	64	91.4	205	84.0	
4	Hostile	68	64.8	45	64.3	48	68.6	161	66.0	17.423 NS
5	Impatient	10	9.5	4	5.7	5	7.1	19	8.0	
6	Anxious	4	3.8	-	-	3	4.3	7	3.0	
7	Disorganized	10	9.5	-	-	1	1.4	11	4.5	
	Type B									
1	Easy going	28	26.7	7	10.0	9	13.0	44	18.0	
2	Non-competitive	37	35.2	9	13.0	12	17.1	58	24.0	
3	Placid	9	8.6	4	5.7	1	1.4	14	5.7	15.696 NS
4	Unflappable	7	6.7	5	7.1	3	4.3	15	6.1	
5	Whether stress-easily	50	47.6	25	35.7	9	13.0	84	34.3	
6	Little dull	63	60.0	47	67.1	25	35.7	135	55.1	

* Multiple Responses
NS: Non Significant

Stress level

Stress levels of occupation, household work and marital status are also major factors which influence the development of some of these chronic disorders. The stress levels of general, occupation, household and marital stresses are presented in Table 7. Among the groups, the different stress types like, general stress, house hold work stress and marital stress of subjects the percentage ranged from 28.6 to 42.8, the mean data was found statistically non-significant. But in case of occupation stress level of three groups of subjects the percentage ranged from 28.6 to 42.8. However, the pooled data of occupation stress is subjected for X^2-test of significance, the mean data was found statistically significant (X^2-value=12.892).

Table 7: Percentage distribution of respondents according to stress levels

Sample Groups	Low (≤ Mean)		High (>Mean)		Combined		χ^2 Value
	N	%	N	%	N	%	
General Stress							
Group-I	57	54.3	48	45.7	105	42.8	
Group-II	35	50.0	35	50.0	70	28.6	0.311 NS
Group-III	37	52.9	33	47.1	70	28.6	
Occupation stress							
Group-I	55	52.4	50	47.6	105	42.8	
Group-II	39	55.7	31	44.3	70	28.6	12.892 **
Group-III	20	28.6	50	71.4	70	28.6	
House hold work stress							
Group-I	55	52.4	50	47.6	105	42.8	
Group-II	26	37.1	44	62.9	70	28.6	4.419 NS
Group-III	29	41.4	41	58.6	70	28.6	
Marital stress							
Group-I	45	42.9	60	57.1	105	42.8	
Group-II	20	28.6	50	71.4	70	28.6	4.456 NS
Group-III	22	31.4	48	68.6	70	28.6	

** Significant at 1% level
NS: Non Significant

Summary and Conclusion

It can be concluded from the results of the study that, Among 245 respondents majority of the subjects were males (63.7%) and rest of were females (36.3per cent), highest number of respondents were graduates and greater percentage of subjects belonged to nuclear family, majority were in the age group of 26-54 years. Monthly income was in the range of 10,000 to 15,000 Rs. Majority of subjects were non-vegetarians and about 98 percent of the subjects followed three meal pattern a day. Early morning meal was invariably coffee in all the groups. However, diabetics were found to consume coffee without sugar their diet contained high amount of ragi and wheat products. Majority of the subjects ranging from 64.0 to 89.0 percent in the three groups belonged to sedentary nature of work, around 50.0 percent of the subjects had good sleep and similar percentage had disturbed sleep. Higher percentage of (52.2%) subjects were alcoholics compared to smokers (47.8%) prior to disease. The duration was more than 15 years and as alcoholism was high as 36.0 percent. Type A personality ranged from 3.0 to 84.0% who exhibited traits like efficient, alert, competent and hostile. In type B personality traits the subjects scored lower among aspects like placid (5.7 percent), unflappable (61%), easy going (18.0per cent) and non competitive (24%). The stress levels ranged from 28.6 to 42.8 percent among the group studied experiencing stress of general, household work, occupational and marital stress. In Group-I and II subjects were found to have high percentage of (59.0) discoloured hair followed by normal skin (56.1). In case of Group III discoloured hair and normal skin recorded in maximum number of subjects showing at 66.0 and 54.0 percent, respectively. The outcome of the study is that, all these three disorders are causing immense threat to human being irrespective of poor or rich, male or female, young or old and rural or urban based. In order to minimize risk of these disorders each one should take utmost care regarding diet, life style, physical fitness and mental status.

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