



## Research Article

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## Lifestyle consequences on Ageing: A survey study

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### ABSTRACT

To remain healthy and happy for hundreds of year with all good functioning sensoria is a basic cherish wish of human since era. In other hand ageing and death are natural and inevitable diseases. Ageing is a physiological process and can get affected by diet, lifestyle and surroundings. In Ayurvedic classics domestic lifestyle is considered as responsible factor for ageing. **Aims and Objectives:** To study sign and symptoms of ageing available in aged subjects of present day society and make its correlation with their dietetics and life style. **Material and Methods:** Subjects having age > 60 years were selected for present study irrespective of their disease, gender, religion, and lifestyle. They were assess for their daily routine, food habits, presence of ageing symptoms as well as intensity of lifestyle diseases. The subjects were divided in two groups i.e. urban and rural groups as per their habitat. **Result:** urban area subjects' life style found more altered then healthy lifestyle and they found with early ageing changes as well as higher intensity of disease. Its impact over health also remained significant for various aspects. **Conclusion:** Domestic lifestyle proportionally affects ageing.

**Keywords:** Ageing, Lifestyle, Gramyahaar, Domestic food, Domestic lifestyle.

### INTRODUCTION

To remain healthy and happy for hundreds of year with all good functioning sensoria is a basic cherish wish of human since era, but the fact is; body has to get decayed and destroyed as ageing and death are considered as natural and inevitable diseases [1]. Ageing is a physiological process that characterized by a progressive alteration of the body's homeostatic adaptive responses, brings unfavorable & progressive changes, with the passage of time (especially after maturity), and terminating invariably in death of the individual.

21<sup>st</sup> century scenario shows that; average life span of person is increased with proportional raise of lifestyle diseases.

Lifestyle is the set of habits and customs that is influenced by the life-long process of socialization, dietary habits & exercise. On the basis of outcome of census 2001 (India) it was assumed that rural area subjects' lifestyle is better than urban area subjects for higher life span and better health [2]. Diet, way of living, tobacco chewing/smoking, drug abuse, lack of exercises are major factors thought to influence susceptibility to many lifestyle diseases [3].

Various references available in *Ayurveda* classics show that daily & seasonal regimen, conducts for food (*Dwadasha Ashana Pravichara*), good moral characters (*Sadvritta & Achara Rasayana*) etc. are proper lifestyle in all the aspects to maintain health and delay ageing. Most accepted theory for ageing i.e. free radical theory also enlightens that, altered lifestyle and psychological stressors are important exogenous factors to accelerate ageing. Hence, quality of lifestyle matters for ageing, health, or diseases condition.

In *Ayurveda* classics, *Gramyaahara* (domestic food / town dwelling) is considered as root cause for all the diseases [4] and taking in to consideration details narration of *Gramyahara* and its consequences, this can be considered as prime cause for probabilistic ageing [5].

Till date no any work has been carried out to assess senile people's lifestyle and its impact on ageing.

### Aims and Objectives

1. To study sign and symptoms of ageing available in aged subjects of present day society and make its correlation with their dietetics and life style.

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## MATERIAL AND METHODS

### Plan of study:

- Type of Study : Survey work
- Study type : Cross sectional - analytical study
- Survey method: Personal interview

### Criteria for selection of subjects

Subjects having age 60 years and above and attending OPD and IPD section of *Roga Nidana* department were selected for present study irrespective of their disease, gender, religion, lifestyle or other demographic status.

### Criteria for exclusion

- Age below 60 years subjects were excluded.
- Terminally ill patients were excluded from the study.

**Groups divination:** All the subjects as per their habitat, divided in two groups i.e. urban area (Geriatric Urban – GU group) subjects and rural area (Geriatric Rural – GR group) subjects.

### Research proforma

A detail research proforma was designed to assess persons' life style and dietary pattern and to evaluate normal health status and diseased condition of registered subjects.

### Laboratory Investigation

- Hematological investigation: Haemoglobin, TLC, DLC, ESR, PCV, Blood indices, Platelet count
- Bio-chemical investigations: LFT, RFT, Lipid profile, S. Calcium, S. Uric acid
- Fasting and PP2 blood sugar were carried out in known case of Diabetes Mellitus patients, while in non-diabetic subjects GTT were carried out.
- Urine: Routine and microscopic examination
- Other investigations: X-Ray, ECG and USG were carried out as per the need / complaints.

**Criteria for assessment:** Patients were examined and assessed on the basis of especially prepared proforma incorporating,

- Ageing symptoms mentioned in Ayurveda classics
- Detail about diet and life style
- Retrospective assessment for indulgence of causative factors of ageing mentioned in classics etc.
- Tenfold examination, Psychological status, geriatric depression and memory status were assessed.
- To assess psychological status of the subjects Hamilton anxiety rating scale and Brief Psychiatric Rating scale and Geriatric depression scale were used.
- To assess memory status, mini mental state (MMS) was used.

### Statistical Analysis

The comparison between urban and rural area subjects; lifestyle and health status was analysed. Subjective parameters were analysed by 'Chi' Square test, whereas for objective parameter Mann Whitney test was used. Sigma stat software was used to analyse the obtained data.

### Status of surveyed subjects

Group →	Geriatric Group	%
Habitat ↓		
Urban (GU)	154	79.79
Rural (GR)	39	20.21
Total	193	100

### Observation

1. **Demographic status:** Maximum subjects were from urban area (79.79%), female gender (51.81%), Hindu religion (90.67%), married (51.03%), primary educated (35.78%), middle socioeconomic status (56.44%), financially dependent (63.55%), having vegetarian diet (84.50%) and were using wheat as staple diet (47.51%).
2. **Average age:** It was between 66 – 67yrs (GU = 66.64 years and GR = 66.31 in both the habitat group).

### Diet and life style assessment

3. **Wake up time:** Rural area 53.85% subjects were waking up early in morning on or before 6 AM and going for sleep on or before 10PM whereas in urban area subjects only 31.82% subjects were waking up on or before 6 AM and again only 22.08% subjects were used to sleep on or before 10 PM. While making comparison, for waking up early in morning and go to bed early rural area group subjects remained significant and highly significant respectively over urban area group. (P=0.018, <0.001)

**Sleep Quality:** In urban area 61.04% subjects were having disturbed sleep and 15.58% subjects were taking sleeping pills regularly. While in rural area 43.59% subjects were having disturbed sleep and only 5.13% subjects were taking sleeping pills.

4. **Regular physical work:** Maximum 56.41% subjects of rural area group were doing regular physical work while in urban area it was in 35.71% subject. Rural area group remained significant over urban area for regular physical work. (P=0.030).
5. **Food habits:** in urban area food habit like *Shamashana*, *Atiashana* and *Vishamaashana* was observed in 20.13%, 31.17% and 51.95% subjects respectively, while in rural area subjects it was observed 12.82%, 12.82% and 35.90% subjects respectively. Here for habit of *Atiashana* urban area group remained significant over rural area subject group. (P=0.036).
6. **Taste dominance in diet:** Urban area subjects remained significant over its counterpart rural area subjects for indulgence of *Amla* (sour) and *Lavana* (salty) *rasa* (P=0.04, P=0.006).
7. **Use of oil and Ghee:** Maximum subjects of both the groups were using cotton seed oil in diet. (urban area=56.49%, rural area=58.97%,) as well as 20.78% and 23.08% subjects of urban and rural area respectively were not using ghee at all in their day to day diet due to either on instruction by their doctors or fear of dyslipidaemia.
8. **Habit for aerated drinks:** 34.42% subjects of urban area and only

5.13% subjects of rural area were used to have regular aerated drinks (> twice per week) and it remained significant (P<0.001).

9. **Use of tobacco:** Higher percentage subjects (61.54%) of rural area were having addiction of tobacco in any form, where as in urban area it was observed in 53.25% subjects.
10. **Presence of Negative emotions:** In urban area 70.78% subjects were having negative emotions like grief, anger etc., while in rural area subjects it was in 58.97% subjects
11. **Anxiety rating scale & BPRS:** while assessing Anxiety and BPRS (brief psychiatry rating scale): urban area subjects 89.69% subjects were having anxiety with average rating scale 5.8 whereas in rural area 79.49% subjects were having anxiety with rating 5.2. Urban area 92.21% subjects average BPRS was 8.9 whereas in rural area subjects it was 8.6.
12. **Indulgence of Gramyahara:** Gramya Ahara indulgence wise it is observed that in urban area geriatric group *Amla, Lavana, Katu* rasa

and *Kshar* indulgence was observed in 62.99, 85.06, 92.50 and 25.32 percentage of subject whereas in rural area subject percentage of same thing indulgence was remained 43.58, 64.10, 82.05 and 10.26 percentage respectively.

Dietary habit of indulgence in freshly harvested grains was found in both the habitat subjects (urban subjects –19.48%, rural subjects 2.56%). Intake of dried food was observed 22.73% of urban subjects whereas 33.33% in rural subjects. Just opposite to it *Abhishyandi* property food indulgence was found higher in urban subjects as compare to rural subjects. (U-33.77%, R-17.95%). Excess intake of fermented food and fried food found in 20.13 % & 35.71% of urban subjects whereas in rural subjects it remained only 5.13% and 7.69% respectively. Dietary habit wise *Visham Ashana* and *Ati Ashana* was found in 51.95% and 31.17% of urban subjects whereas in rural it remained 35.90 and 12.82 percentage subjects respectively. Day sleep and Grief found almost in both the habitat subjects almost equally i.e. urban – 61.04% & 44.81% whereas rural 58.97% & 38.46% respectively.

**Table 1:** Presence of ageing symptoms

Ageing symptoms	Geriatric Group				Pre-Geriatric Group			
	GU	%	GR	%	PgU	%	PgR	%
<i>Sariracheshta Asamarthya</i>	97	62.98	21	53.84	32	56.14	17	73.91
<i>Manachesta Asamarthya</i>	43	27.92	9	23.07	20	35.08	4	17.39
<i>Indriya Karma haani</i>	73	47.4	16	41.02	27	47.36	13	56.52
<i>Utsahahaani</i>	76	49.35	17	43.58	32	56.14	14	60.86
<i>Dhatu kshayaPratiti</i>	52	33.76	13	33.33	8	14.03	4	17.39
<i>Balahaani</i>	97	62.98	18	46.15	24	42.1	16	69.56
<i>SmritiHrasa</i>	82	53.24	18	46.15	30	52.63	15	65.21
<i>Alasya</i>	34	22.07	5	12.8	22	38.59	7	30.43
<i>Agnisaada</i>	72	46.75	17	43.58	17	29.82	9	39.13
<i>Vepathu</i>	24	15.58	6	15.38	0	---	0	---
<i>Twakparushya</i>	58	37.66	19	48.71	14	24.56	12	52.17
<i>Vali</i>	70	45.45	21	53.84	3	5.26	3	13.04
<i>Palita</i>	150	97.4	39	100	44	77.19	18	78.26
<i>Shwasa</i>	53	34.41	10	25.64	9	15.78	10	43.47
<i>Kasa</i>	16	10.38	3	7.69	0	---	0	---
<i>Hridrava</i>	57	37.01	8	20.51	8	14.03	5	21.73

**Table 2:** Onset of ageing symptoms

Ageing Symptoms	Age of onset (in Years)		Ageing Symptoms	Age of onset (in Years)	
	GU	GR		GU	GR
<i>Sariracheshta Asamarthya</i>	62.67	63.6	<i>Agnisaada</i>	64.48	65.88
<i>Manachesta Asamarthya</i>	64.86	61.27	<i>Vepathu</i>	71.23	70.62
<i>Indriya Karma haani</i>	63.37	63.89	<i>Twakparushya</i>	61.05	62.5
<i>Utsahahaani</i>	63.29	64.84	<i>Vali</i>	65.27	64.16
<i>Dhatu kshayaPratiti</i>	65.11	64.14	<i>Palita</i>	50.9	53.29
<i>Balahaani</i>	64.40	63.63	<i>Shwasa</i>	66.40	67.44
<i>SmritiHrasa</i>	63.87	65	<i>Kasa</i>	64.96	63.79
<i>Alasya</i>	61.13	61.83	<i>Hridrava</i>	67.53	65.5

## Assessment of Probabilistic ageing (in form of Presence of lifestyle disease)

- Urban area: 50% of subjects were having hypertension followed by type-II diabetes (37.01), osteoarthritis (20.12%), heart disease (IHD) (7.14%). COPD and Asthma (3.90% each), osteoporosis (3.25%), stroke, depression (1.95% each.) and CRF (1.30%) in urban area pre geriatric group.
- Rural area: Presence and intensity of disease found comparatively low i.e. 30.76% each subjects were having diabetes and hypertension followed by osteoarthritis (7.69%), COPD and heart disease each (5.13%), and osteoporosis (2.56%). Rural area pre-geriatric group
- In diabetes mellitus patients maximum i.e. 94.73% subjects of urban area were having **uncontrolled blood sugar** (either FBS or PP2BS or both) with their current medications whereas in rural area 50% patients of diabetes were having uncontrolled blood sugar with their current medications. Urban area group remained significant over rural area group for uncontrolled blood sugar. ( $P < 0.001$ ).
- Hypertension** was found uncontrolled (with current medications) maximum in urban area subjects (44.15%), whereas in rural area it was 25% only.
- Impaired GTT or new detection of diabetes mellitus** were found maximum 13.63% subjects of urban area having impaired GTT or detected DM during the study whereas in rural area subjects it was only in 2.56% subjects.

Taking in to consideration genetic predisposition and acquired origin of lifestyle diseases, 40% subjects of urban area group were having acquired type of lifestyle disease where as in rural area subject it was found in 33.33% subjects.

## Overall assessment of both area subjects' lifestyle

### Urban area group

- Positive features:** less habit to watch television, less subjects had obesity,
- Negative features:** Wake up late, not to do regular physical work, over indulgence of *Amla*, *Lavana*, have much aerated drink, higher percentage subjects with negative emotions as well as high scale of anxiety rating scale and BPRS as compare to rural area subjects.

### Rural area group (GR)

- Positive features:** Wakeup early, regular physical work, taking food in required amount and on time, less indulgence of *Amla*, *Lavana* and *Katurasa*, not to have much aerated drink.
- Negative features:** not found any.

## DISCUSSION

By waking up early at the same time daily, one can stabilize circadian rhythm, and improve the quality of sleep [6]. Here in this study also better sleep quality found in rural area subjects (66.41%) than urban area subjects (38.96%).

Regular physical activity reduces depression and stress, increasing stress tolerance (*Dukha Sahishnuta*), improve cardiovascular health, and, eventually, protecting against the risks of dementia [7]. In present study rural area subjects found to do physical activity in regular course

(56.41%), this may be the reason that less percentage of hindering in activity of daily routine (*Sharira Chesta Asamarthya*) and anxiety found in rural area subjects than its counterpart urban subjects.

Over indulgence of *Amla rasa* brings flabbiness in the body and hence may bring early changes of ageing in the body [8]. In present study flabbiness (*Dhatu Shaithilya*) may be the one of cause for higher percentage of uncontrolled sugar and hypertension found in the subjects of urban area subjects.

*Lavana* rasa provokes *Pitta* and hence can develop *Vali*, *Palitalike* symptoms of ageing prematurely [9]. Higher percentage of ageing symptoms was found in urban area subjects. Indulgence of sour food in excess may be one of the reasons for the same.

Present study data shows that, even village people are switching over to cotton seed oil than peanut oil in daily diet just to prevent themselves from cholesterol level status. But the fact is; lower ratio ( $\leq 10:1$ ) of Omega – 6 & Omega – 3 is more desirable in reducing the risk of many of the chronic inflammatory diseases [10] and This ratio is higher in cotton seed oil than pea nut oil [11]. In this situation to use cotton seed oil can also have a negative impact on healthy lifestyle.

As, Aerated drinks contains excessive sugar, Person who takes aerated drink  $\geq 2$  time / week is 1.5 times more prone to develop Diabetes [12]. Prospective cohort studies evaluating the effect of aerated drink on the risk of diabetes mellitus type-II and the metabolic syndrome have found the strongest and most consistent association in large studies including follow up [13]. Over the time with high consumption of acid drink like cola, soda, Calcium and other minerals can actually be drawn from bones and teeth to deal with the ongoing low pH on sought to the digestive system [14]. In this study also it was observed that in spite of continuation of concerned medicine, significant subjects were having uncontrolled blood sugar as well as higher percentage of subjects were having uncontrolled blood pressure in urban area subjects as compared to rural area subjects.

Apart from the disease heart, lungs and vascular diseases; tobacco can also create cognitive dysfunction. It reduces memory and cognitive abilities [15], and brain shrinkage (cerebral atrophy) [16]. In present study onset of *Smritihrasa* was found earlier in rural group than urban area group for that, Tobacco may be the one of reason.

*Chinta*, *Shoka* increases *Vayu*, while anger provokes *Pitta* [17] that not only harms at psychological level but it also harms of *Bala*, *Varna*, *Sukha* and ultimately *Ayusa* of the person [18]. Psychological stress is one of the cause to increase production of free radicals, and it significantly speed up the ageing. As per psychological theory of ageing; negative emotion plays an important role for early development of ageing [19] even in present study most of the ageing changes found in higher percentage subjects of urban area than rural area. Presence of negative emotions in higher percentage subjects may be the one on the cause.

## Relation of *Gramyahara* indulgence and its relationship with presence of ageing symptoms and intensity of probabilistic ageing

Even with medications if disease is not responding properly, it shows faulty lifestyle and somewhere impaired status of *Vyadhibala* *Virodhibala* / *Pratuanika Bala*. This *Bala* is obtained by proper lifestyle, diet, positive psychological status and good quality of *Dhatu*. In ageing stage, where gradual *Shlathasaarata* (Flabbiness of body tissue) occurs, rest of the components i.e. proper lifestyle and positive psychological status helps to sustain the *Bala*. That was remained comparatively poor in urban area geriatric group as compare to its counterpart rural area.

## CONCLUSION

Lifestyle is a way of living that reflects the attitudes and values of a person or group. It includes diet, activity and psychological status. Lifestyle disease occurrence is primarily based on the daily diet / habits of people, inappropriate relationship of people with their environment. In present study urban area, subjects were having faulty diet pattern as well as unhealthy lifestyle too. The same is reflected in form of rapid ageing symptoms manifestation, as well as fast progress / higher intensity of diseases.

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