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The Actions for Ageing Elegantly!

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Abstract

Ageing is natural and inevitable, but ageing elegantly ageing is individual choice! lifetime exposure to various pollutions, infections, unhealthy habits like smoking, alcoholism, irregular routines in eating, sleeping and exercise, reduced resilience, chronic diseases like diabetes, hypertension, COPD, Asthma, TB, and declining immunity are the common hurdles of ageing elegantly among elderly in India.

Diseases such as Covid 19, Dengue fever, Influenza, Hepatitis, tuberculosis, malaria, and pneumonia continue to plague elderly more than youth due to individual susceptibility, poor response to drugs and complications leading to disabilities and the need for rehabilitation and palliative care are much higher among elderly in India. The main organ/tissue targets as age advances are: i) Musculoskeletal system affecting joints and mobility ii) Metabolic and endocrine system mainly diabetes and digestive system iii) Cardiovascular system especially heart muscle, heart valves and peripheral artery diseases iv) Mental and psychological health issues like memory loss, anxiety, depression, v) Sensory systems disturbances like Cataract, retinal diseases, mid-ear deafness, Anosmia and skin conditions like skin tags, warts, seborrheic keratoses, and wrinkles vi) Poor Mutual connections, loneliness and social health.

In ancient Indian society ageing is considered as a stage of giving up all the worldly pleasures and preparing themselves for ageing as part of the growth. The focus on youth and prevention of aging, is reflected in Ayurveda by emphasising on rejuvenation therapy or Rasayana Chikitsa. Similarly, Homeopathy believes that ageing, is due to changes in immune system hormonal imbalance, change in eating habits, lifestyle changes, and underlying medical conditions. Gerontology is the branch of allopathic medical science concerned with the prevention and treatment of diseases in older people.

The World Health Organization's active ageing model is based on the optimisation of four key "pillars": health, lifelong learning, participation, and security. It provides older people with a policy framework to develop their potential for well-being, which in turn, may facilitate longevity.

Elegant ageing interventions are done in three stages- primary, secondary, and Tertiary preventions. They are classified as i) preventive/promotive ii) corrective / curative services, alternately as A) "broad-spectrum" and B) narrow spectrum" actions.

Materials & Methods: This article is an application of the basic care of systems targeted for ageing in 171 elderly friends (M=114, F=57) the author is associated with. These are four groups called as Healthy Ageing Seniors prefixed with the identity of the group (RUHAS, KJWNBHAS, ALHAS, & RHAS) in the last 5 years. The participants are elderly colleagues, friends, relatives, and their spouses. While the first two groups meet in person once year (except

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2020,2021 due to Covid 19 pandemic) and the third and fourth groups meet once every month. The author has tried to capture the illnesses, care seeking practices through telephonic consultations, second opinion seeking and periodical meetings, directly interacting and the mortality data through people who visited the diseased before death. This study represents middle and upper middle class elders across India, and not the general elderly Indians.

Keywords: Youth; Elderly; Healthy Ageing Seniors (HAS); Decade of healthy ageing; Ageing Elegantly

Introduction

United Nations Population Fund, India (UNFPA) 2023 India Ageing Report has said that by 2046 it is likely that elderly population will have surpassed the population of children (aged 0 to 15 years) in India. With the decadal growth rate of the elderly population of India currently estimated to be at 41%, and the percentage of elderly population in the country projected to double to over 20% of total population by 2050. More concerning is the sex ratio (females per 1,000 males) among the elderly which has been climbing steadily since 1991, though the ratio in the general population is stagnating. Between 2011 and 2021, the ratio increased in India as a whole and across all regions, barring the Union Territories and western India. In 2021 it was 1061 as against 1033 in 2011, while the sex ratio in general population is hovering around 930 (1971) to 946 (1951) [1]. "Poverty is inherently gendered in old age when older women are more widowed, living alone, with no income and with fewer assets of their own, and fully dependent on family for support, pointing to the major challenges facing India's ageing population are the feminisation and ruralisation, and policies must be designed to suit their elegant ageing based on specific needs [1].

While aging is inevitable, ill-health is optional!!

The Decade of Healthy Ageing (2021-2030) provides a new opportunity to address the gender power, relations and norms that influence health and wellbeing of elderly men and women and the intersectional links between gender and age. The actions required are in- (a) Creating age-friendly environments- Physical, social, and economic environments are important determinants of healthy ageing. Age-friendly environments are better places in which to grow, live, work, play and age elegantly b) combating ageism as age affects how we think, feel and act towards others and ourselves c) Providing integrated care- Older people require non-discriminatory access to good-quality essential health services that include prevention; promotion; curative, rehabilitative, palliative and end-of-life care; safe, affordable, effective, good-quality essential medicines and vaccines; dental care and health and assistive technologies, while ensuring that use of these services does not cause the user financial hardship d) Building long-term care systems- elderly people continue to aspire for well-being and respect regardless of declines in physical and mental capacity. Access to rehabilitation, assistive technologies and supportive, improve the situation; but many people reach a point in their lives when they can no longer care for themselves without support and assistance [1]. The main organ/tissue targets of old age, are i) Musculoskeletal system ii) Metabolic and endocrine system iii) Cardiovascular system especially Myocardium iv) Mental and psychological health and v) Mutual connections and social health, allow us to explore means of optimizing health during the process of aging. Elegant ageing interventions are classified as preventive/ promotive or corrective / curative or as "broad-spectrum" or specific or narrow spectrum" actions.

This focus on youth and prevention of aging, is reflected in Ayurveda by emphasising on rejuvenation therapy or Rasayana Chikitsa. Chyavanprash, a pharmaceutical preparation that is popular even today. Modern medicine works tirelessly to increase our life expectancy and has succeeded in doing so through a multitude of interventions.

Homeopathy believes that ageing, is due to changes in immune system - hormonal imbalance, change in eating habits, lifestyle changes, and underlying medical conditions. Homeopathy identifies Prostate enlargement, Musculoskeletal system and joint problems like arthritis, gout, osteoporosis, urinary incontinence, fistulas, Menopause and Sciatica as common old-age health conditions. Homeopathic treatment depends on the symptoms and severity of the condition, and they are safety and effective medicines like Arnica, Nux vomica, etc are a preferred choice of treatment. Homeopathy drugs are non-addictive and gentle without any adverse effects. They not only reduce symptoms but also have a long-lasting positive effect and regain overall health.

Starting with discovery of calories restriction on ageing in 1930, Biologists have suggested that ageing is an inheritable trait with a genetic basis.

The World Health Organization's active ageing model is based on the optimisation of four key "pillars": health, lifelong learning, participation, and security. Ageing elegantly depends upon individual efforts and the facilitation by health care providers mor family physicians.

This article is an application of caring the basic systems targeted for ageing in 171 elderly friends (M=114, F=57) the author is associated with four groups called as Healthy Ageing Seniors prefixed with the identity of the group (RUHAS, KJWNBHAS, ALHAS, & RHAS) in the last 5 years. The participants are friends and their spouses. While the first two groups meet in person once year (except 2020,2021 due to Covid 19 pandemic) and the third and fourth groups meet once every month. The author has captured the health behaviours, illnesses, sickness care seeking practices and mortalities among the group members through primary care services of locals and telephonic consultations for second opinion and interactions in periodical meetings, and mortality data through family members or friends who attended the diseased before death.

Among my acquaintances in this group, most are from UNICEF India retired staff, who live across India mainly in cities. Among my 1962 MBBS batch alumni majority live in different districts of Karnataka and about 5% reside in USA/UK/Australia and attend annual alumni meets since 2012. The relatives live mostly in Bengaluru, Mysuru and some northern districts of Karnataka. ALHAS group is residing in an apartment complex, Bengaluru where the author lives since 2018.

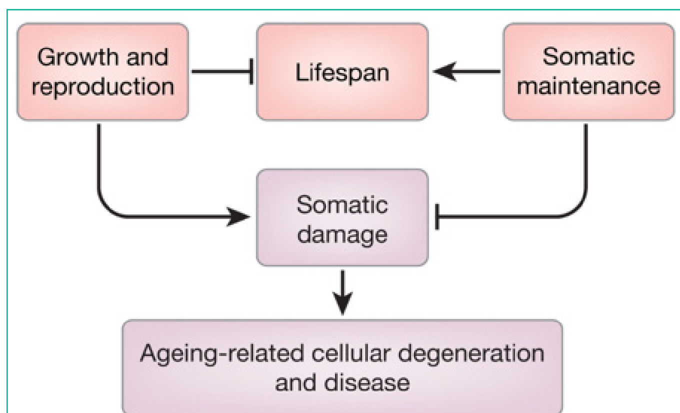

Figure 1: Balancing somatic maintenance with growth and reproduction.

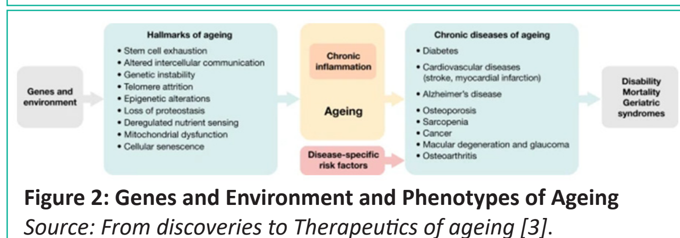

Figure 2: Genes and Environment and Phenotypes of Ageing
Source: From discoveries to Therapeutics of ageing [3].

Research Data

Mortality data indicts CVDs as the major cause of death as 11 out of 190 (5.8%) who died in the last 5 years succumbed to Cardiac conditions, followed by cancers causing 3 deaths, 2 each from GI system and respiratory problems and one suicidal attempt consuming poison. This gives an annual death rate of 1.16%.

Current Lifestyles, Health Behaviours & Sickness Care Seeking Pattern

The RUHAS group: All most all of them continue their health insurance after retirement and therefore go for annual preventive checkup. They also need annual renewal of the prescription for the continuation of the existing treatment, therefore, both anti-ageing and narrow spectrum curative care actions are by and large fine. The primary care accessibility is unfortunately sought from specialists and there is occasion where some people have argued that there are no more general practitioners in metropolitan cities. This practice some time lands them in unnecessary investigation and investigation (Biomarkers) linked multiple consultation with no comprehensive health care. The nutrition component, Stress management and skills and strategies for coping with change to retired life is fine among professionals as they keep busy with alternate employment or doing an honorary job that keeps them engaged for 6-8 hours a day. However, similar continued working opportunity for retired general service (GS) staff. Most of the staff become more Spiritual that when they were in active service. Majority are addicted to TV or Mobile and its various Apps and spent lot of screen time disturbing sleep hygiene vii) Except social alcohol consumption among half of the staff, substance abuse and drug misuse is rare. In terms of preventive actions like Vit D, Vit B12 supplementation, some do not follow the practice as they are not reimbursable expenses.

KJWMHAS group: As this group consists of all doctors most of them specializing in different fields access the best possible care as far as narrow spectrum curative services. Primary health care is taken acre by themselves or spouses. Despite being doctors, at least half of them do not go for annual preventive check-up except for those who have health insurance.

ALHAS group: This is probably one of the two groups along with the relative's group, who hardly have any family doctors, go for preventive check-ups. They almost always land up in specialist clinics enquiring on WhatsApp group based on their symptoms. Some neighbourhood hospitals do conduct screening camps 2-3 times a year, but these very often become marketing strategy, or patients' mobilization strategy, but not onsite service provision camps, as the clinicians who come for such camps are residents or junior doctors and paramedical staff like Nurses, physiotherapists, Optometrist, audiologist etc. In emergencies the apartments about half a dozen resident doctors do attend. Our ALHAS group doctors do provide free services at home in case of need. We also ran Covid 19 centre treating about 32 cases, referring only 2 of them for hospitalized care. The average cost of daily medicine cost was around INR 50.

RHAS group: Half of this group members are in Bengaluru and seek and rest across the state and neighbouring states like Maharashtra, Tamil Nadu, and AP. Most primary care events do

Table 1: Demographic details of the participants incorporated in the informal interactions.

Sl. No	Name of the group	Participants			Age Range (0n 1 Jan 24)				Diseased in last 5 yrs.	Remarks
		Male	Female	Total		61-70	71-80	81+		
1	Retd. UNICEF Healthy Ageing Seniors (RUHAS)	45	25	70	M	7	35	3	7	
					F	3	21	1	2	
2	KMC 62B Jab We Met HAS (KJWMBHAS)	34	10	44	M	0	30	4	3	
					F	2	8	0	1	
3	Assetz Lumos HAS (ALHAS)	15	10	25	M	5	8	2	0	
					F	6	3	1	1	
4	RHAS	20	12	32	M	5	13	2	3	
					F	8	3	1	2	
Grand Total		114	57	171	M	17	86	11	13	
					F	19	35	3	6	

Mortality data indicts CVDs as the major cause of death as 11 out of 190 (5.8%) who died in the last 5 years succumbed to Cardiac conditions, followed by cancers causing 3 deaths, 2 each from GI system and respiratory problems and one suicidal attempt consuming poison. This gives an annual death rate of 1.16%.

Table 2: Cause of Death among those who died in last 5 years (N=17).

Group	Cardiovascular diseases	Cancers	Respiratory	GI system incl. Liver	Miscellaneous	Total
Retd. UNICEF M	4	1	1	1		7
Healthy Ageing Seniors (RUHAS) F	1	1				2
KMC 62B Jab M	2	1				3
We Met HAS (KJWMBHAS) F	1					1
Assetz Lumos M					1 (Suicidal Poisoning)	0
HAS (ALHAS) F						1
RHAS M	2		1			3
F	1			1		2
	11	3	2	2	1	19

Table 3: Current Health Status as of 1 January 2024 (TN=171, M=114, F=57).

Group		CVDs (HT, MF, Stroke)	Endocrine System Diabetes, Thyroid	MS System Arthritis, Osteoporosis	Cancers	Sensory System: Cataracts-1 Hearing loss-2 or both-3	Mental & Psychological Balancing Memory & Anxiety, Depression Mental Health	Gynaecologic problems	Apparently Normal
RUHAS	**M-45**	M-23	M-18	M-3	M-2	1=14, 2=15, 3=6	M-10		M-5
	F-25	F-13	F-9	F-15	F-3	1=5,2=4,3=10	F-5	F-10	F-3
KJWMBHAS	**M-34**	M-20	M-23	M-4	M-2	1-3, 2=5,3=7	M- 7		M-3
	F-10	F- 6	F-4	F-7	F-0	1=2,2=3, 3=3	F-3	F-7	F-2
ALHAS	**M-15**	M-12	M-8	M-2	M-0	1=3,2=2,3=3	M-4		M-2
	F-10	F-5	F-3	F-6	F-1	1=2,2=2,3=2	F-2	F-5	F-1
RHAS	**M-20**	M-13	M-10	M-3	M-1	1=2,2=4,3=5	M-6		M-2
	F-12	F-5	F-4	F-6	F-1	1=1,2=3,3=2	F-3	F-7	F-2
Total M=114		M-68	M-59	M-12	M-5	1=22,2=26,3=21	M-27		M-12
F=57		F-29	F-20	F-34	F-5	1=10,2=12,3=17	F-13	F-29	F-8

Notes:
i) CVDs include Hypertension, Myocardial Infarcts, Atrial Fibrillation, Valvular disease
ii) Endocrine System Diseases Include-Diabetes, Thyroid diseases, Hypogonadism & Oestrogen def.
iii) Musculoskeletal system problems Include- Arthritis, Osteoporosis, Gout
vi) Cancers include- Prostate, Colorectal Cancers in men & Breast, Cervix & Ovarian & Oral cancers in women
v) Sensory System conditions: include Cataract, hearing loss, both, peripheral neuritis, Sciatica
vi) Mental & Psychological conditions: include Balancing, memory losses, Anxiety, Depression, Psychosis etc.
vii) Gynaecological Problems: include endometriosis, Uterine fibroid, uterine cysts & polyps
viii) Apparently Normal- No known illnesses explicitly
Total numbers do not tally as the same person may have more than 1 conditions. On an average person over 70 years had more than 3 health challenges like balancing, visual, auditory, memory, Hypertension & Diabetes.
Among the survivors majority (T=56.7%, M=59.6%, F=50.8%), suffer from CVD problems HT, MI,AF, VD etc, followed by sensory organ damages mainly Cataract and hearing loss (T=50.8%, M=50.8%, F=50.8%), Endocrine diseases (T= 46.2%, M=51.8%, F=35%) mainly diabetes, and Thyroid, Gynaecological conditions (50.8%), Psychological issues of forgetfulness, anxiety depression, Musculoskeletal system (T=26.9%, M=10.5%, F=59.6%) and Cancers (T=5.8%, M=4.3%,F=8.8%)

Table 4: Gen. Lifestyle, Mutual Connections & Spiritual Activities - 1 January 2024 (TN=171, M=114, F=57).

Group		Sleep Hygiene <6 hrs- Poor 6-8 Hrs- Good >8Hrs- Oversleep.	Exercise: Walk-1, Gym-2, Yoga-3 Severe – >5 days/wk.>1hr./D Moderate 3-5days/ wk./1hr /D Mild=3-5 day/<1 hr/D	Diet 2-3/ day- Routine >3/day- Good IM fasting- Best	Spiritual Rituals (Jap/ Bhajans, Pray, Namaz) Daily-1, 2-3 D/ wk. -2 <1 /week. - 1	Meditation at least 15 minutes each time Daily-1 2-3/Wk. - 2 <1 /Wk-3 Never-4	Smoking Cig >10 / day 1 1-10/Day-2 Occasionally-3 Never-4	Alcohol Consumption Regular/heavy=1 Daily, Moderate=2 <3days/Wk.-3 Occasional/Light-4 Never-5
RUHAS	M-45	P-23, G=20, O-2	S=3, Mo=20 Mi=22	R-=15, G=17, B=13	1=20,2=15,3=10	1=10,2=05,3=10,4=20	1-7,2-8-3-6,4-24	1-2,2-6-3-4,4-5, 5=28
	F-25	P-07, G-15, O-3	S=0, Mo=10 Mi=15	R-=15, G=07, B=03	1=15,2=05,3=05	1=05,2=05,3=05,4=10	1, &2-0, 3-2,4-23	1,2, &3=0, 4-10, 5=15
KJWMBHAS	M-34	P-10, G=23, O-1	S=2, Mo=20 Mi=12	R-=10, G=17, B=07	1=10,2=15,3=09	1=03,2=05,3=10,4=16	1-2,2-4,3-3,4-25	1-2,2-3-3-4,4-5, 5=20 1,2,3=0, 4-3, 5=7
	F-10	P-02, G-06, O-2	S=1, Mo=02 Mi=07	R-=03, G=05, B=02	1=07,2=03,3=00	1=02,2=0,3=00,4=05	1,2,3=0, 4-10	
ALHAS	M-15	P-07, G=08, O-0	S=3, Mo=10 Mi=02	R-=03, G=08, B=04	1=10,2=05,3=00	1=10,2=05,3=00,4=00	1,2, =0,3=2 4=13	1,2,3=0,4=2,5=13
	F-10	P-5, G-04, O-1	S=0, Mo=0 Mi=10	R-=03, G=06, B=01	1=07,2=03,3=00	1=05,2=05,3=00,4=00	1,2,3=0, 4=10	1,2,3,4 &5=0
RHAS	M-20	P-07, G=11, O-2	S=2, M=05 Mi=13	R-=05, G=12, B=03	1=10,2=10,3=00	1=03,2=02,3=03,4=12	1=2,2=3,3=2,4=12	1,2,3=0,4=5,5=15
	F-12	P-3, G-09, O-0	S=0, Mo=05, Mi=07	R-=04, G=07, B=01	1=08,2=03,3=01	1=05,2=05,3=02,4=00	1,2,3=0,4=12	1,2,3,4 &5=0
Total M-114		P-47, G=62, O-5	S=10, Mo=55 Mi=49	R-=33, G=54, B=27	1=50,2=45,3=19	1=26,2=17,3=23,4=48	1=13,2=15,3=13,4=73	1=4,2=9,3=8,4=17,5=76
F-57		P-17, G-34, O-6	S=1, Mo=17, Mi=39	R-=25, G=25, B=07	1=37,2=11,3=06	1=17,2=15,3=07,4=15	1=0,2=0,3=2,4=55	1,2&3=0,4= 13, 5=44

Diet: R Routine-Normal with not much for fruits & Veg, G-Good= Normal with fruits & Protein, B Best = Eating window < 10hrs. based on 24 hrs recall. Spiritual Routines and Meditation Spiritual rituals in social/religious groups or individual efforts based on a week's recall.

not come to my notice, but all specialists' consultations or hospitalized cases do take my second opinion. In majority case it is advising on the drugs prescribed and investigation suggested. I do manage about one thirds of the episodes on teleconsultation.

Discussions

Extended human longevity is genetically controlled, as indicated by the higher chance of siblings of centenarians to survive more than 100 years and moderate familial clustering of longevity. However, linkage analyses are inconclusive, due to admixture in control populations**.** Interim results suggest that dietary restriction improves health (for example, less body fat, higher insulin sensitivity and favourable circulating lipids), resulting in longevity. Before we can rationally evaluate the potential impact of interventions to increase human lifespan substantially, we need to understand the primary causes of ageing, which leads to the important question of why and how we age [2]. Most scientists now believe that ageing results from the greater weight placed by natural selection on early survival and repro-

duction than on vigour at later ages. This age-related decline in the force of natural selection, is due to high mortality caused by extrinsic hazards in natural environments, resulting in a relative scarcity of older individuals. When these hazards make survival to old age rare, natural selection favours gene variants that promote early growth and reproduction. In less hazardous environments, survival increases and gene variants that promote somatic maintenance can propagate. Hence, species-specific lifespan is determined by a trade-off between somatic maintenance and early growth or reproduction [2].

The best-known ageing phenotypes in humans, include amyloid plaques in the brain and atherosclerotic plaques in blood vessels are hallmarks of human ageing. Similarly, kyphosis (spinal curvature) is caused by osteoporosis in humans. Other ageing phenotype from hair greying to cancer susceptibility, decreased cardiac function, reduced memory, and learning, decline in GH, DHEA, testosterone, IGF, innate immunity, thyroid function, increase inflammation, osteoporosis, skin morphology changes, sleep patterns, decrease in sight, hearing, changes in fat distribution and general fitness, vary among individual humans.

Just as elders can't run as fast or jump as high as they did as a teenager, their brain's cognitive power—that is, the ability to learn, remember, and solve problems, slows down with age. Elderly find it harder to summon once familiar facts or divide their attention among two or more activities or sources of information. These changes affect elders' ability to focus, so they find themself getting more easily distracted than they were when they were younger. Hearing loss that often accompanies aging makes it more difficult to distinguish speech in a noisy environment. Because hearing then requires more concentration than usual, even mild loss of the ability to focus can affect speech comprehension. Most people start to notice changes as they enter their 50s and 60s.

Although these changes can cause consternation, most age-related memory and thinking problems don't stem from an underlying brain disease. Instead, it simply reflects a slower processing speed and poor encoding and retrieval of new memories because of diminished attention. However, even though the brain is slower to learn and recall new information, the ability to make sense of what they know and to form reasonable arguments and judgments remains intact. Many of these limitations are reversible and related to poor sleep, but structural changes that take place in elder's brain as they age can explain some of these developments, too. Brain regions involved with memory processing, such as the hippocampus and especially the frontal lobes, undergo anatomical and neurochemical changes over time. The natural loss of receptors and neurons that occurs with aging also make it harder to concentrate. Therefore, seniors not only learn information more slowly, but they also have more trouble recalling it because they didn't fully learn it in the first place. With slower processing, facts held in working memory may dissipate before they have had a chance to solve a problem. The ability to perform tasks that involve executive function declines with age. Many people learn to compensate for these changes by relying on habit most of the time and devoting extra effort to focus on new information they are trying to learn. Even the aches and pains of getting older can affect focus. Pain itself is distracting, and some of the medications used to treat it also can affect concentration [4].

Elegant Ageing Interventions (EAI): The basic intervention for elegant ageing consists of three groups of action to be done and one group of actions that need to be avoided by the primary care provider or family physicians. A shown in table, Macro nutrient balancing with adequate protein intake, more fibre consumption through fruits and vegetables and calories adjusted according to the need based on the activities an individual does and metabolic conditions like diabetes, hypertension etc. Micronutrient inadequacy is common in India particularly of dietary iron, Vitamin D and Vitamin B12 and the best option is to supplement periodically. In pour study groups most, people take vit D 600,000 IU monthly, Neurobion Forte tablets (contains calcium pantothenate, cyanocobalamin, nicotinamide, pyridoxine hydrochloride, riboflavin, and thiamine mononitrate), which helps protect, support, and repair damaged nerve cells, thereby preventing tingling and numbness associated with neuropathic pain. Dehydration is the commonest mega-nutrient deficiency due to four key metabolic changes i) Decline in total body fluid as we age, leaving fewer water reserves to use ii) Lowered thirst response becomes weaker with age, resulting poor prompting to drink. iii) Decreased kidney function with age, resulting more water through urination iv) Some health conditions and medications, the elderly take lead to an increase in water loss through urination. Even minor illnesses, such as infections affecting the lungs or bladder, can result in dehydration in older adults [2,4,5].

A. Anti-aging Interventions: Individual or Family _Preventive/promotive or "broad-spectrum" practices_-

i) Sensible sustenance (nutrition): While general elderly population in India fail to take balanced nutrition for sensible sustenance as they advance in age. This is mainly due to poverty, or their children do not live with them and support, or personal understanding of what is good nutrition or accessibility of times prepared fresh food with due attention to adequate proteins, or sources of Fiber, vitamins and minerals through fruits and vegetables. Fortunately, our study groups members do not have any such hurdles. Some elderly may also have the problem of chewing that helps digestion for want of teeth. Dentures for missing teeth in India cost from 10,000 (1-2 teeth) to 500,000 (for complete set implantation), which many low and even middle-income groups may not afford. All the four group members fortunately do not face any such problems in terms of affordability or denture. Laboratory tests for various reasons among 100 of our study group in 2023, indicated two thirds of them had Vit D deficiencies, whereas 50% of the do take Vit. D supplementation every month. Similarly, Vit B12 deficiency was noted among 30% of them and half of them took Neurobion supplementation. Iron deficiency anaemia was found in 20% of men and 45% of women, most of whom take oral iron supplements regularly. Five women needed injectable Iron and two needed blood transfusion as their Hb% went below 7gm/dl in 2023.

***ii) Stress management*:** Stress is a mental reaction to challenging circumstances. It's the basis of the "fight-or-flight" response. Some stress is helpful, chronic stress can lead to negative health outcomes that worsen with age. Everyone experiences stress occasionally, but the effects of stress on older adults is greater than in different age groups. The stress in aging cause new health problems and worsen existing ones, apart from speeding up the ageing process itself. Some common causes of stress in older adults include- Chronic illness, Caregiving responsibilities, Loss and grief, Loneliness or boredom, financial worries, and major life changes, such as retirement, relocation, dependency on children etc. In elderly people stress

manifests as Headaches, Digestive issues, Irritability, Heart palpitations, Sleep disturbances, Poor concentration and crying. In our study group 20% among both men and women do face some or the other stress despite financial stability. The manifestations in our group are constant mild headaches, disturbed sleep, and irritability. The causes elicited included loneliness, inability to adjust with children and restriction to interact with grandchildren and dependency.

Most people in our group address stress by opting exercises including walking & Yoga, eating well, sleep enough, do meditation at least 30 minutes a day, listen to music and some are active on social media like WhatsApp group, face book, Instagram etc. There are 3 women and 2 men who are unable to manage stress and seek medicinal (Benzodiazepine) help often. The videos on guided meditation ranging from 15 minutes to 1 hour are helpful,

***iv) Skills and strategies for coping with change*:** The ability to cope with change due to retirement, reduced income, dislocation from a comfortable independent home, and environmental (Climate, social) changes is called resilience. Our environment and genes influence our level of resilience the proportion varies in different individuals. Effective coping strategies are active coping, positive reframing, instrumental support, religion, and acceptance. Active coping is characterized by solving problems, seeking information or social support, seeking help, and/or changing one's environment.

In the four study groups coping with change has not posed much challenge except for 2 women who lost their husbands and children didn't support and a man who also lost the spouse due to suicide. I saw them going through shock/denial, anger/fear, finally acceptance, and commitment to revert to normal life over 3-6 months. All have come out of the situation by adopting meditation, leading more spiritual life, social grouping and working with NGOs. I used the tools of relabel the change, reattribute destiny, refocus on the current situation, and revalue and move forwards, with everyone who were struggling to overcome their anxious thoughts and urges and became learned myself in the process.

v) Spirituality: Spirituality is a significant part of many Indians lives, and it becomes more important as they grow older. Persistent population aging worldwide is focusing attention on modifiable factors that can improve later life health. There is evidence that religiosity and spirituality are among such factors. Older people tend to involve in religious and/or spiritual endeavours worldwide. A spiritual connection can boost seniors' wellness, especially when their senior living community supports faith practices. Spiritual needs encompass meaning, life purpose, and connectedness to established beliefs, practices, values, and traditions. Looking at spiritual changes I have observed among our group people for over 10-30 years, I find as they aged almost everyone changed to have high rates of involvement in religious and/or spiritual endeavours, after their retirement. I and atleast half of the people of the groups I am associated, have become more religious and spiritual by visiting temples daily, participating in community Bhajans and going for pilgrimage once a year. Observing fortnightly Ekadashi (either only water- 'Nirahar' or surviving on fruits 'Falahar') and feel more contented than they were earlier. Religiosity and spirituality are difficult to define and distinguish and the two concepts are often considered together. There is evidence that both are associated with longer life and better physical and mental health, as measured by health expectancy [8].

***vi) Sleep hygiene*:** Inadequate sleep reduces quality of life, influences negatively on high blood pressure, weight gain, stroke, heart attack, diabetes, memory problems, and risk of death. A good sleep routine includes having a set time to start winding down and a way to relax. Going to bed and getting up at fixed times is another good sleep habit. Ideally, a sleep routine should be the same every day, including weekends. For better sleep I always advise to i) be consistent ii) making sure the bedroom is quiet, dark, relaxing, and at a comfortable temperature iii) remove electronic devices, such as TVs, computers, and smart phones, from the bedroom iv) Avoid large meals, caffeine, and alcohol before bedtime and v) get some exercise.

In our study group only 6 people faced sleep problem in 2023. They were managed by relieving chronic pain (backache, knee, and other joints pain) and controlling medical conditions like frequency of urination, sleep apnoea. Two persons needed treating depression to improve sleep.

***vii) Substance abuse and drug misuse avoidance*:** Aging leads to social and physical changes that may increases vulnerability to substance misuse, though little is known about the effects of drugs and alcohol on the aging brain. What is known is older adults metabolize substances more slowly, and their brains can be more sensitive to drugs. Overall, alcohol is the most frequently reported substance of abuse for persons aged 65 or older. In our study group also, we observed only 4 men abusing alcohol apart from1 person succumbing to alcohol induced cirrhosis of liver.

Substance misuse can worsen normal age-related changes in cognition. As older people are already experiencing cognitive conditions, (dementia / mild cognitive impairment), have difficulty in using alcohol or prescription medications (opioids & benzodiazepines) safely and according to guidelines.

Substance misuse in older adults is often overlooked and undertreated, in part due to a false belief among acre takers, providers, professionals, that older adults do not develop or need treatment for drug and alcohol use disorders. Professionals may not know how to approach screening, assessment, and treatment. Some providers also have a notion that older adults are not interested in or do not respond well to treatment for substance misuse, which is not true. When interventions are adapted to the physical, cognitive, and psychosocial needs of older clients, they are likely to be effective. Screening in primary care and emergency settings, seniors are often seen for co-morbid conditions like chronic pain and falls, especially in situations, like following major life changes (e.g., retirement [forced or unwanted], loss of a significant other spouse, children etc), when starting a new medication, and as part of an annual physical exam. If need be, the Short Michigan Alcoholism Screening Test-Geriatric Version can be used.

Name: DOB: Date:

1. When talking with others, do you ever underestimate how much you drink? YES / NO

2. After a few drinks, have you sometimes not eaten or skip a meal as didn't feel hungry YES/ NO

3. Does having a few drinks help decrease your shakiness or tremors? YES /NO

4. Does alcohol sometimes make it hard for you to remember parts of the day or night? YES/ NO

5. Do you usually take a drink to relax or calm your nerves? YES/ NO

6. Do you drink to take your mind off your problems? YES / NO

7. Have you ever increased your drinking after experiencing a loss in your life? YES/ NO

8. Has a family member or doctor ever said they were concerned about your drinking? YES/ NO

9. Have you ever made rules to manage your drinking? YES/ NO

10. When you feel lonely, does having a drink help? YES/ NO

Whie Detoxification, Cognitive and behavioural therapies and Medication-assisted therapies are the key approaches for treating, social support is a critical piece of achieving and sustaining long-term recovery from substance misuse for elderly.

Lifestyle optimization: Taking care of physical, mental, and cognitive health is important for healthy aging. Even making small changes in our daily life can help live longer and better. In general, everyone must stay active, eating and sleeping well, and get periodical health check-up regularly.

Two thirds of our study members do walk daily for 15-30 minutes at least 5 days a week (men 80% and women 50%). However hardly 20% of men and 5% of women make structured exercise. As already discussed, social and spiritual optimization, social connections, Yoga, Spirituality had increased among our study members after retirement, declined during Covid 19 pandemic years of 2020 &2021 and by 2023 almost all reverted to per-pandemic routines.

The discussions in 2023 annual reunion of was revealed that most of our friends opted for i) mobility in the home ii) lower use of transport in local commuting up to a mile for shopping and banking iii) wellbeing support networks like WhatsApp and Retirees association activities iv) increased social connections with neighbours, residents' welfare associations and spiritual groups v) increased cultural experiences like going to temples, churches, Mosques, Bhajans, Kirtans etc .v) Half of the men and one quarter of the women spent more time outdoors and ten percent of both men and women spent time in domestic pets and animal interactions [6,7].

B. Corrective/curative or "narrow spectrum" treatments, to address the individual conditions an individual has like balancing problems, eyesight, hearing, diabetes, hypertension, hypercholesterol, arthritis, constipation, sleep disturbances, anxiety, depression, any other concerns, complaints, comorbid conditions, and complications.

As witnessed in our study groups most middle and upper income Indian senior citizens suffer at least 2-3 conditions, moas common of them hypertension, diabetes, cataract and mild to moderate hearing loss by the age of 60 years and in the next decade have heart problems or stroke mainly due to uncontrolled hypertension, diabetes, and lipid profile. While for most of the conditions our colleagues sought care with nearest specialists, nearly 60% of them took my second opinion before undergoing major interventions. I am discussing 6 top conditions (Sight, Hearing issues, Denture, Balancing, CVDs, and Diabetes) based on our study groups' morbidity pattern and their remedial measures.

***1. The Aging Eye care*:** As people age, their eyes age as well, lenses become harder and less elastic, becomes more difficult to read without glasses and most will find it increasingly difficult to drive at night. Some people experience flashes and floaters, their eyes are sometimes dry, or teary, or tired. Too frequently their aging eyes become more vulnerable to cataracts and vision-impairing diseases like glaucoma, Age-related Macular Degeneration (AMD) or diabetic retinopathy. It's important to retain sight and the freedom and fulfilment it ensures as we age. Everyone needs to know the progress in cataract surgery and replacement lenses, a new sustained-release medication for glaucoma, emerging tools to monitor and manage AMD, and ways to slow effects of diabetic retinopathy, and opt for them when required. The key interventions include 6 cataract replacement lenses that enhance vision quality, gene therapy revolutionizing treating wet AMD, Quick cure for surprising cause of sagging eyelids, twice-a-year glaucoma treatment that end daily drops, a medication to treat presbyopia, common medications that affect eyes and vision and symptoms that alert to see an ophthalmologist urgently [9].

In our study groups 43/114 (51.7%) males and 27/57 (68.4%) females have either eyesight alone or along with hearing problems. One thirds of men and 20% of women have already undergone cataract surgeries.

2. Hearing loss increases risk of dementia: Although most people have mild hearing loss, for people ages 80 years and older, it's more common for hearing loss to be moderate to severe than mild. Moderate to severe hearing loss disruptive to one's life, but it also increases the risk to develop dementia. In our study groups 47 men and 29 women have either mild to moderate deafness alone or with visual challenges. In our group 20% men and 10% women are using hearing aids.

What can we do about it? -using hearing aids lessens that risk. A study published in JAMA focused on a sample of adults in the United States from the National Health and Aging Trends Study, which follows Medicare beneficiaries. The participants sampled were 70 or older. The researchers found that about 33% of participants had normal hearing, 37% had mild hearing loss, and 30% had moderate to severe hearing loss. Dementia occurred least often among those with normal hearing (6%), more often among those with mild hearing loss (9%), and most often among those with moderate to severe hearing loss (17%). That's a large increase in risk, particularly for those whose hearing loss is moderate to severe. Prior research had shown that hearing loss accounts for about 8% of all dementia cases worldwide, without specifying what connection exists between them.

In this new study, the investigative team used an electronic tablet-based audiometer to evaluate objective measurement of hearing loss of the participants' hearing for four pure tone frequencies that are most important for understanding speech. There is increasing evidence that the more the brain is stimulated, the less likely it is that dementia will develop. When there is hearing loss, auditory stimulation is reduced, increasing dementia risk. And individual suffering from moderate to severe hearing loss, they are less likely to participate in social activities, due to embarrassment and find it unrewarding to attend a social event when they cannot hear what is going on. Social activities are one of the best ways to stimulate the brain, as there is evidence that our brains evolved to facilitate social behaviour. Reduced social activity has been linked to cognitive decline. Thus, this new study provides evidence that the hearing loss

increases the risk of dementia due to reduced brain stimulation directly and through reduced social interaction [10].

1. Do the following & don't let hearing loss raise risk of demenKeep your ears clean. (never put anything in your ears smaller than your elbow)

2. If you can't hear or have mild hearing loss, start using hearing aids, that help in mild to moderate hearing loss, more important is to wear them. If hearing aids aren't working, get them fixed.

3. Don't be passive ramp up your social life and other activities.

3.Need for Dentures: Dentures are appliances used as a replacement of missing teeth and tissues. They are artificial teeth which enable normal functioning of the human mouth. Dentures are of two types – Complete & Partial. Complete dentures are advised when all the teeth are missing, and partial dentures are applied when some teeth are missing. They are custom made especially for a set of teeth and gum line. Complete Dentures fit over the upper teeth and roof and on the lower teeth placed like a horseshoe. They are conventional dentures and are removed during the night for cleaning. Partial Dentures consist of replacing missing teeth attached to artificial gum connected by a metal framework which helps to hold the denture in place. Missing teeth can change the position of other teeth hence partial denture helps to overcome this problem and keep the teeth intact [13].

Dentures help individuals with tooth loss to maintain a healthy lifestyle, including the ability to speak, eat and socialize, while improving facial appearance, a healthier face, and a great smile, improves self-esteem, and quality of life. While many get their first set of false teeth between 40 and 49, the need to replace teeth becomes nearly universal as people reach retiring age of 60 years in India. Edentulism is one of the public health burdens for elderly people as about 30% of the elderly population aged over 65 years is edentulous across the globe. There is a significant rise in the growth rate of elderly needing dentures in India from 5.6% (1961) to 16% (2021) [12,13]. While in general population, the need for dentures is for nutrition balancing, in the categories of our groups is opted for multipurpose they serve as listed above. Nearly 70 men and 30 women in our groups use dentures already. Most of them use removable dentures of missing teeth. Only 3 men and 2 women use fixed full denture.

Permanent, implant-supported dentures protect against bone loss, their fit will not change over time, as occurs with removable dentures, leading to a greater level of comfort and stability, as well as greater longevity. Their self-life is longer they will not need refitting or replacement every 5 to 7 years like conventional or removable dentures. The removable dentures cost in India varies from INR 12000 to 85000 depending on the material selected and the number of teeth to be replaced by in a patient.

On the other hand, fixed dentures are more costly than traditional dentures, costing from INR 200,000 -500,000 in 2023 (source-actual marker search in Bengaluru and those who used among known persons), because they require surgery to securely place the dental implants. Many patients who do not get reimbursements hesitate to spend money on permanent dentures when there are less expensive options, like traditional dentures [11].

4. Balncing: Aging involves a progressive, gradual, and natural deterioration of various physiological functions including balance, a term that describes the dynamics of body posture to prevent falls. Balance discrepancy is one of the major risk factors for falls among older adults. A fall results in injury, disability, or loss of life. The other consequences of fall are the development of fear of future fall that would lead to a decline in mobility and functional independence. Inability to maintain balance is not the result of a normal aging process and disease. Age-related changes in the three sensory systems, i.e. vestibular, visual, and somatosensory, interfere with the ability to balance effectively. Other factors like decreased lower-body strength, coordination, and flexibility also contribute to a decrease in balance ability. Activities such as reaching or bending involve a shift of the Centre of Gravity (COG) of the body within the base of support (BOS). When a proper movement strategy execution does not occur, the person will fall. As people age, they lose balancing function through loss of sensory elements, the ability to integrate information and issue motor commands, and because of diminishing musculoskeletal function. Diseases common in aging populations lead to further deterioration in balance function in some patients. Balance can be maintained by exercising to strengthen our hips, knees, and ankles. Just walking daily can build lower-body strength, an important element of good balance. In 2023 annual reunions of RUHAS 40 out of 68 participants failed 1 minute one leg standing. Following which I advise all friends to Practice standing on 1 foot (if required hold on to a chair), Walk backwards (I do 1 out 3 Kms reverse walk every day) or sideways, learn tai chi, a mind-body exercise that improves balance and take up yoga for 30 minutes each day [14].

5. Diabetes: It's important to manage diabetes as it causes serious health problems like heart disease, stroke, kidney disease, eye problems, and nerve damage that may lead to amputation. It also poses greater risk for cancer and Alzheimer's disease. For those without other major comorbidities, an HbA1C goal of 7–7.5% and a fasting glucose target range of 6.5–7.5 mmol/L (117–135 mg/dL), whereas for frail older adults or those with multisystem disease, an HbA1C goal of 7.6–8.5% and a fasting glucose target range of 7.6–9.0 mmol/L (137–162 mg/dL) are recommended. In people with obesity, weight loss by intermittent energy restriction (IER) or intermittent fasting has multiple, dynamic effects on the Brain-Gut-Microbiome (BGM) axis, like i) reduced activity in brain regions affecting eating behaviour and ii) increased microbial diversity in the gut, over the short term.

Avoidance of hypoglycaemia is an important consideration in choosing therapeutic agents and establishing glycaemic goals among elderly. All types of Insulin and it's secretagogues like sulfonylurea and meglitinides, should be used with caution in frail older adults. As older adults with diabetes are at risk of developing macrovascular complications and their absolute risk for CVD is much higher than that in younger adults. Treatment of hypertension (particularly isolated systolic hypertension) and dyslipidaemia (using statin drugs) in older patients are clearly beneficial. Similarly, the value of daily aspirin therapy in patients with known macrovascular disease is advocated.

American Diabetes Association (ADA) guidelines of 2023 adapted by Indian Diabetes foundation include i) emphasis on supporting higher weight loss (up to 15%) based on the efficacy of and access to newer medications when appropriate ii) New recommendations related to sleep health and physical activity in people with diabetes iii) Broad consideration of social deter-

minants of health in guiding the design and delivery of care iv) New hypertension diagnosis cut-offs (≥130/80 mmHg) v) The expanded role of SGLT2 inhibitor use in preserved and reduced heart failure ejection fraction vi) the role of Finerenone in individuals with diabetes and chronic kidney disease with albuminuria and vii) New lower LDL goals for high-risk individuals. The current recommendation of diabetes treatment has changed from what was a practice of single drug initiation a decade ago [15,16].

6. Cardiovascular disease including Hypertension: Cardiovascular Disease (CVD) is the most frequently diagnosed disease as well as the leading cause of death in the elderly. A recent study indicated that the overall self-reported prevalence of diagnosed CVDs was 29.4% for older adults aged 45 and above in India. Age, gender, residence and work or other tensions were associated with increased risk of CVD. Female older adults were more likely to have CVDs than male. Comorbidities like high cholesterol, diabetes and physical inactivity were key risk factors for CVDs. The study also indicated that Family history was associated with a greater perceived risk for CVDs [17]. In our case reports more than half of the surviving males and females are suffering with CVDs and 11 out of 19 deaths in the last 3 years were due CVDs. Elderly people commonly have geriatric syndrome, which is an age-specific problem that is complicated by the presence of cardiovascular, cognitive, and physical dysfunction and is accompanied by many other chronic diseases. While caring for the elderly, in addition to CVD, various inherent problems a patient-centred approach, must be considered instead of evidence-based guidelines that are designed for young adult patient. This approach must be used to maintain the functionality, independence, quality of life, and dignity of these patients. Heart disease treatment depends on the cause and type of heart damage. Healthy lifestyle habits, like eating a low-fat, low-salt diet, getting regular exercise and good sleep, and not smoking are an important part of treatment. Increases in life expectancy and better cardiovascular care in the last decade in India have significantly reshaped the epidemiology of cardiovascular disease and have created new patient profiles. Common Health Problems Affecting Older Adults with CVD include Hypertension, multimorbidity (more than 2 conditions), polypharmacy (use of 5 or more drugs), frailty and geriatric syndrome (multiorgan impaired functioning) and adverse non-cardiovascular outcomes is challenging clinical practice.

C. Endocrine Optimization: Endocrine optimization is defined as the maintenance of endocrine and metabolic health, and correction of pre-existing endocrine and/or metabolic dysfunction, by using appropriate therapeutic interventions, to achieve person-centric therapeutic/biochemical thresholds, in a safe and well-tolerated manner, to enjoy optimal health status. Every therapy must be prescribed only if there is a “firm clinical indication”, keeping caveats, concerns, and contraindications in mind.

No single intervention is perfect or complete, and a combination of endocrine and nonendocrine therapies will be required for endocrine optimization. Various Corrective/curative endocrine therapies to ensure elegant aging are:

1. Management: Assessing growth hormone deficiency, hypothyroidism, diabetes, adrenal insufficiency, Preventive treatment of osteoporosis, sarcopenia, rational menopausal hormonal therapy/androgen replacement, and use of anabolic steroids

2. Prevention: Avoidance of i) overdiagnosis/labelling of endocrine disease, ii) abuse /overuse of endocrine drugs, iii) understanding of age specific, gender-specific, person-centric biochemical targets, for overall well-being and satisfaction.

The glucose, glycated haemoglobin, and thyroid-stimulating hormone targets are higher or more relaxed in older persons. Older persons are more sensitive to side effects of drugs and may require lower doses of blood-pressure and glucose-lowering medicines. On the other hand, calcium requirements are higher in postmenopausal women than their premenopausal counterparts [18].

Summary

Ageing is inevitable, but ill-health can be avoided or better managed as people age over 60 years.

Natural ageing, lifetime exposure to various pollutions, infections, unhealthy habits like smoking, alcoholism, irregular routines in eating, sleeping and exercise, reduced resilience, chronic diseases like diabetes, hypertension, COPD, Asthma, TB and declining immunity are the common causes of concerns among elderly in India.

Diseases such as dengue fever, hepatitis, tuberculosis, malaria, and pneumonia continue to plague due to increased resistance to drugs and individual susceptibility, poor response and prognosis and complications leading to disabilities and the need for rehabilitation and palliative care are much higher among elderly in India.

Top age specific health challenges of senior citizens include arthritis, Sight, Hearing issues, Denture, Balancing, CVDs, and Diabetes, Cognitive health, Mental health, falls and other physical injuries, bladder and bowels control and cancers based on our study groups’ morbidity and mortality pattern

Elderly women in India face specific challenges of breast, and cervical cancers, endometriosis, osteoarthritis, osteoporosis and hypertension and Diabetes, needing periodical screening, early diagnosis, and management. Indian women are more prone to Type 2 diabetes, and heart disease as compared to westerners.

Various endocrine and metabolic interventions help in strengthening the body’s structure as well as function, and in preventing premature aging, the primary health care provider or family physicians must facilitate the process of elegant ageing.

Facilitating overall well-being and satisfaction and not biomarkers guided interventions must be the aim of individual health care services of the elderly.

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