# LIVE HEALTHY

*age gracefully*

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*by*

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**Preface**

Every person born of a woman is endowed by God to live a healthy long life even up to 120 years. But not everybody is opportuned to live up to 60 years. This is not the wish of our Creator. It is an individual's life style choices in early life that determines the health status in later life. Active healthy ageing is an attribute everyone should possess. This attribute begins as early as age 40, even earlier than 40! Flashback in your memory, your primary, high school, professional training institution or college mates, how do some of them look like now? Do they appear older than you are? What can you deduce to be the reason? On the contrary, do most of your old class mates appear younger than you? What are the reasons for the differences?

Ageing is a normal process that starts from the day a child is born, ageing begins. The truth of the matter is that some men and women grow old gracefully. The reasons are that they do understand and appreciate the simple practice of successful ageing before they clock 50 years of age. The opposite is the situation for some, because they age rapidly and appear haggard,

malnourished and emaciated. These descriptions make ageing frightening and undesirable. But the earlier we know some of the reasons for ageing and all that happen to us as we age, the better for us to take action to grow old gracefully.

The book, *Live Healthy, Age gracefully*, is written primarily to share with you some of the research findings and practical experiences of renowned health experts and scientists on simple and practical ways of ensuring healthful and active ageing.

The book is intended first, to bring out the best out of different ways of ensuring healthy long life devoid of physical deformity or dependency on anybody. Second, the book is also intended to serve as a reference point for those who intend to know the biology of ageing and the facilitating factors that promote and sustain healthful and active ageing.

Scientifically men and women are endowed to live between 100 and 120 years. The crucial question is that how would you live to these promised years? Is it going to be graceful, or awkward, gracious or surly, admirable or haggard? How would your old age be like? Would it be more of independent or less dependent? According to Dr. Weis: *"No man has the power to stop the passage of time, but every man has the power to make ageing more healthy and less harmful."*

Are you making your ageing process more healthy or ungracious by all that you do, eat, drink or think? Regardless of your response and your age and present condition, the book aims at giving you another chance to make necessary adjustment in preparation for a pleasant, healthful and active ageing. It is never too late

to having a graceful and healthful ageing. If you are determined and committed to make the change that is necessary. Anytime you are in any social or religious gathering, look around you and observe at least ten elderly persons. What are your observations? Do you admire all of them? What percentage of them do you want your ageing to be like in future? The more you do at an early age to prepare yourself for successful and admirable ageing, the better.

The book is specifically written to assure you that your best years can even be those you spend in your 70s, 80's, 90s and 100s. Read what one of the foremost experts once wrote, *"With good nutrition, healthy habits, and high quality nutrition supplements, the best years of a man's life can be absolutely and positively be those he spends in his 70s, 80s and 90s ."*

What is your choice? An enjoyable, healthy long life full of vigor or the opposite? The choice is yours. You can start today to build an active healthy ageing. It is never too late. Make healthy choices that would not put your future at risk.

Good luck.

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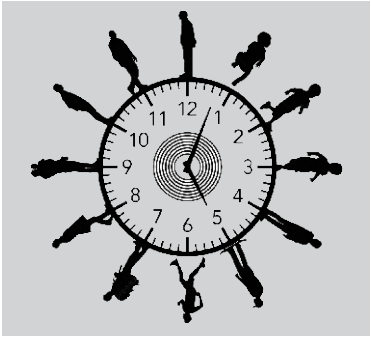

## THE QUEST FOR HEALTHY AGEING

The quest for healthy ageing should start from the day a person knows what is good or bad or can differentiate from full, partial living or completely existing or not existing or dead. Indeed, there are three stages of life –childhood (or "morning" period of a man), adulthood (agile and independent or "afternoon" period of man) and senior-hood (the tail end period of a man). The senior-hood or old age period can be dependent or independent. It all depends on the ways and manners the two early periods have been cared for.

Everybody prays for that late stage, that is the old age should be the most enjoyed, peaceful and fulfilling than the childhood period. Is that not your prayer too? So is ours. In fact, health and peace of mind are the greatest things elderly persons pray for when the clock is tickling towards the end of their races in life. But the crucial questions are what is health and peace of mind to an elderly person? What are the ingredients for these two precious treasures? Stop for a moment!

What are your expectations at old age? How would you wish your old age to be like? These are important questions that you should answer to the best of your God given knowledge. Should in case you cannot answer these questions, look around your neighborhood and observe some elderly persons' physical body. Observe their daily activities, commitments in the neighborhood, their fitness and their reputations in the community. How many of them would you wish to be like when you are at their ages?

Twenty, thirty, forty or not more than fifty per cent? The lower the percentage, the greater chances that those elderly persons have not been well prepared for active healthy ageing. Unfortunately, there is no specific formula or formal training where an individual is groomed for healthy senior-hood preparation.

You see, the process of active healthy ageing begins with being adequately informed and making the right choices of staying physically active, having healthful habits, consuming high quality foodstuffs, being spiritually and emotionally stable. The earlier you and I start doing the right things that will guarantee our healthy ageing the better.

If you are still under 40 years old, the earlier you start laying the foundation. If you are over 40, it is never too late to start. The choice is yours and by investing in purchasing this book shows that you are serious about ensuring healthy ageing. Congratulations. May you have a blessed active healthy ageing.

The preparation for healthy senior-hood or old age

begins before the age of 40 years. Forty signifies an important age mark in the life of a man. A common saying says, *"A fool at 40, is a fool for ever"*. Some people are of the opinion that at the age of 40 years, the vigorous activities by man begin to decline. Are you of the same opinion? This should not be so if at an early stage, you and I are conscious of improving and maintaining our health. Knowing that all you and I eat, drink, do and think are the total sum that constitute our health and our abilities to confront the challenges of senior-hood period.

The question again is; what can you and I do to guarantee our elderly to be healthy with secured peace of mind? This book intends to share with you a desired future for the ageing population, the current health, social and other challenges facing them, things that are precipitating these challenges, things that you and I could do to ensure graceful ageing at the family and community levels. While you and I cannot change our genetic make up, we surely can change our lifestyles. After all, according to Quinn, J., a health expert, did write, *"An estimated 65 percent of health is shaped by a person's lifestyle, with 35 percent originating in genetics"*

It should be apparent to us that our lifestyles determine our health and peace of mind right from adulthood to senior-hood. What is health? What is lifestyle? The components of these two terms actually govern what the shape our old age shall be. It is the primary aim of the book to illustrate how the health and lifestyle shape our senior-hood period.

It is the expectation of the authors that your old age shall

be healthful and peaceful. But before you say amen, are you doing the right thing to secure your healthy ageing now? What can you say about your physical, emotional and spiritual health? Are you overweight, obese or grossly obese? Are you physically active or physically inactive? Regardless of your present condition there is hope for improvement as long as you are determined and committed to practice some of the ideas we are going to share together in this book.

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*CHAPTER ONE*

# APPRECIATING HEAD START FOR ACTIVE HEALTHY AGEING

*"Why we grow old is an enigma, it is a universal truth which can not be challenged and there is no magic capsule or tablet invented yet to stop the process of ageing"* ***D. Bich, 2012.***

One of the universal attributes that all human beings share together is the process of ageing from the very day we are born. Early understanding and preparation for the ageing process at an early age shall definitely assist the reader, care givers, policy makers, health care providers and non-governmental agencies as to make an informed choice. This informed choice shall secure a graceful and not a scornful ageing. Healthy lifestyles that include healthy dietary habits, regular physical exercise and maintenance of good health in middle age shall remarkably enhance graceful ageing. More importantly, the above practices shall also reduce significantly the high cost of health care and dependency at old age.

This chapter highlights some of the reasons for head start for active healthy ageing at old age.

## The Increasing Population of the Elderly

At present, Nigeria is the most populous country in Africa and she has the highest number of older population in Africa and currently occupying the ninth position in the world. The high cost of medical bills among the elderly has actually made it compulsory for early preparation for regular physical activity, nutritional and spiritual developments by the elderly. It is all that we do presently that determines the trend for our future ageing process. Would it be a graceful or scornful ageing process? The answer depends on all that we do, eat, drink, or think at youthful and adulthood periods. The earlier we plan and execute healthful lifestyles, the surer for a graceful ageing process. The time to begin should be as early as 35 years of age when we are still strong and viable.

## Health Expenditure among the Elderly

The capital health expenditure of the elderly has been reported to be the highest among the other vulnerable group (children under five, pregnant women and adolescents). The cost of medical care among the elderly has been attributed to old age related diseases (type 2 diabetes mellitus, obesity, cardiovascular diseases, cancer, arteriosclerosis, rheumatic arthritis and others). Unfortunately, health insurance is practically not available to this vulnerable group. Indeed, premature death is guaranteed to this group when there is no health insurance, financial and family support during health crisis. Understanding various ways of avoiding any of this old age related diseases at early age shall certainly assist us spending less medical bill when the financial resources are limited.

**The Life Cycle Theory**

According to the life cycle theory, *"Individuals consume more than what they produce in two periods of time and hence are more vulnerable to poverty at these periods"*. These two periods are childhood and adulthood. In an attempt to avoid total dependence, poverty stricken and disability in old age, we need to start at an early age to prepare for an active healthy ageing. An elderly individual is still capable of providing abundantly for himself, family and even the community, if he or she has adequately made good use of his or her young adult and middle age periods.

**Diminishing Bone Density**

Health experts and scientist have asserted that at age 35, bone density diminishes. This reduction in bone density leads to bone and joints disorders. In an attempt to maintaining or strengthening bone density, there is the need for weight bearing exercise. In addition to weight bearing exercise, walking, jogging and running have been shown to maintain bone density. It is apparent from the above statements that to prevent bone density loss, we need to start at an early age to jog, walk and run on a regular basis. These activities should be part of our lifestyles and they need time and dedication. Once we start at an early life and it is part of our habits, definitely it will carry us to old age. These activities guarantee graceful ageing.

**Declining of Muscles Mass**

It has been reported that between the ages of 30 and 70 years, muscles mass declines more than 20 percent in both men and women. This loss of muscle mass has been attributed to the absence of regular physical exercise.

The question at this point is how does your muscle mass look like? Is it flabby or firm? The earlier we start restricting loss of muscle mass, the surer graceful ageing is guaranteed. The same exercise that prevent bone loss density is equally good for muscle mass declining.

**Setting the Pace of Early Age**

You and I know that at 35 years of age, we are sure to be better physically shaped than at 45 years of age. If this is an axiom, then you and I should begin to build up our physical fitness in middle age because it lowers medical costs in later years. Besides, it helps to boost the immune system which declines as one grows old. One needs to set the pace for healthful and graceful ageing if possible even before one clocks 35 years of age.

**Changes in Family Structure**

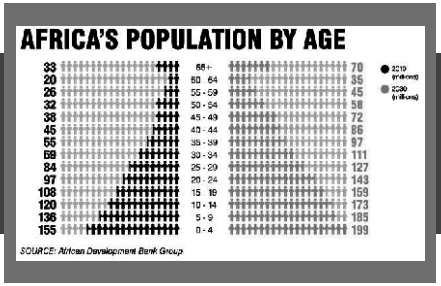
The rapid progress of industrialization, modernization, urbanization, globalization and increased economic liberalization, according to Sonar and Malipalit, have had tremendous impact on traditional or extended family structure in developing countries. These factors have led to deterioration of joint families. Young adults have to migrate in search of lucrative jobs, thereby leaving the elderly to cater for themselves. The traditional long practice of extended family has become nuclear family slogan of, *"me, my wife and my children"*, has become the new trend.

The social implication of this change is that an elderly person is more likely to be housed in old peoples' home, nursing home or institutional nursing place. Thus, dependency on the children at old age is gradually fading away in developing countries. The earlier we start to

prepare ourselves physically, economically, socially, spiritually and health wise for independence and freedom from disability in old age the better.

**Nonexistence of Social Support for the Elderly**

Unlike advanced countries where the government provides social security, medical care, food voucher and even home care for the elderly, these programmes for the elderly are very rare in developing countries especially in Africa. The family is the strongest facilitator, comforter, provider for the elderly. Incidentally, this traditional family structure is being eroded by the nuclear family concept described above. There is no palpable support by either the state or Federal governments. Of all the needs of the elderly, health care services are crucial because of the meager pension being received by the elderly. The mere fact that there are no social support, health coverage for the elderly and the traditional extended family structure is rapidly declining, the earlier we must began to prepare ourselves for golden the years ahead. The preparations should include physical fitness, healthy dietary intake, spiritual or emotional stability and community involvement. All these preparations should start earlier when we are strong and able.




*CHAPTER TWO*

# HISTORICAL PERSPECTIVE: TRENDS IN ELDERLY POPULATION, CLASSIFICATION AND KEY TERMINOLOGIES

*"Grow old along with me! The best is yet to come, the last of life, for which the first was made"* ***Robert Browning.***

World wide, the dramatic increase in the number of elderly population has been a great concern to both advanced and developing countries. The health, social, shrinking workforce, psychological and economical implications have also been major concerns. In fact, men and women that are sixty years and above in developed countries were 12 percent of the population in 1950. Today the population has skyrocketed to 22 percent. It has been projected that by 2050 the elderly population will reach 32 per cent. The developing countries are not left behind, the population has increased from 6 percent in 1950 to 9 percent as at present. It is projected to rise to 20 percent by 2050. According to World Health Organization (WHO), 2 billion people will be 60 years and above, and by 2050 the number would have tripled the

number in 2000 (600 million). The top 5 countries with the largest projected increase in elderly population include Singapore, Malaysia, Columbia, Costa Rica and the Philippines. In 2005, according to the United States Census Bureau, Nigeria was ranked among the top 30 countries in the world based on the size of her people aged 60 and above.

Table 1 below depicts Nigeria with the highest population of the elderly in sub-saharan Africa (6.4 million) and by 2030 the number will double. It is even projected to be 16 million and by 2060, it is put at 47 million.

**The Population of Elderly (million) in Sub-saharan Africa**

| Country | Population of Elderly(million) 60 and Over | |
|---|---|---|
| Country | 2005 | 2030 |
| Nigeria | 6.4 | 12.0 |
| South Africa | 3.4 | 5.0 |
| Ethiopia | 3.2 | 6.0 |
| Congo (Kinshasha) | 2.4 | 5.0 |
| Sudan | 1.6 | NA |
| Tanzania | 1.5 | NA |
| Kenya | 1.2 | NA |
| Ghana | 1.1 | NA |

***Source:*** *U.S. Census Bureau*

Confirming the rapid increase of the elderly population, the National Population Commission (NPC) did record 4.6 million of Nigerians as 60 years and above in 1991. Whereas, this figure was put at 1.3 million in 1950. Definitely, the elderly population shall continue to increase. Table 2 below buttresses the above statement.

**Table 2:** Projected Population Ageing in Africa, West Africa and Nigeria

| | Population 60+ *(percent)* | | | Population 60+ *(millions)* | | |
|---|---|---|---|---|---|---|
| | 2005 | 2025 | 2050 | 2005 | 2025 | 2050 |
| Africa | 5.2 | 6.4 | 10.0 | 47.4 | 85.8 | 192.9 |
| West Africa | 4.7 | 6.5 | 9.0 | 12.0 | 21.8 | 51.6 |
| Nigeria | 4.9 | 6.0 | 9.9 | 6.4 | 11.5 | 25.5 |

***Source:*** *UND 2008*

## Classification of Ageing and Key Terminologies

There has been several methods of categorizing the elderly population in both developed and developing countries.

This classification can be chronological, physiological, clinical, cultural, psychological and social.

## Chronological age

Every human being is assessed by the calendar year and not so much as his or her condition. Some of the examples of chronological classification of ageing are as follows:

20 – 39 years of age as young,
40 – 50 years of age as middle age,
51 – 64 years of age as near old,
65 – 74 years of age as young old
75 – 84 years of age as middle old, and
85 and above as old.

**Physiological age**
This classification is different from the chronological or calendar age. It is the actual physical state of the person regardless of his or her age. It is this classification that shows a person to be either older or younger than his or her calendar year. Some people appear to be younger or older than their peers because of the way they physically look or act.

**Clinical age**
This classification is based on clinical characteristics of the person. Grey or white hair; skin becoming dry; wrinkled; muscles becoming weak; vision becoming blurred due to eyes' problems such as cataract and glaucoma; reduced physical activities; reduction levels of sex hormones (estrogen and testosterone); decrease in height and bones becoming bristle.

**Cultural age**
A person is culturally acceptable as being old as soon as such a person becomes a grandmother or grandfather. In some cultures, a person is also regarded as an elderly person if the individual has a son or a daughter older than the individual.

**Psychological age**
This classification is different from the psychologist's mental age or intelligent quotient. Rather, it is the measure of such human being interactions. It is the true age of a person's ability of social interactions. Some people are tagged as being childlike, while some are respected because they act pleasantly and maturely beyond their chronological age.

**Social age**
This classification is different from psychological age because it specifically measures a person's ability to behave in a mature and acceptable manner with his or her fellow human being in the environment.

**Key definitions in Gerontology**

**Gerontology**
This is the study of all aspects pertaining to ageing including pathological, psychological, economical and sociological challenges.

**Aged**
It is simply defined as being advanced in years.

**Ageing**
It is the gradual wearing out of the body as one grows older. It can also be defined as the irreversible biological changes that occur in all living things with the passage of time. Ageing is also referred to as a multi-dimensional process of physical, psychological and social changes .

**Active ageing**
According to WHO, "The process of optimizing for health, participation and security in order to enhance quality of life as people age. Active ageing aims at extending health expectancy and quality of life for all people as they age."

**Health**
Health can be defined as a sound mind in a sound body, at optimum well being; as keeping the body and mind in highest level; as a condition which permits an individual to live happily and successfully; and as physical, social and spiritual well-being.

The WHO summarizes health as**,** ***"****A state of complete mental and social well being and not merrily the absence of diseases or infirmity"*

**Healthy ageing**
WHO defines it as *"The process of optimizing opportunity for physical, social and mental health to enable older people to take part in society without discrimination and to enjoy an independent and good quality of life."*

**Life style**
It can be described as manner of living that reflects a person's values and attitudes, or as a term used to describe the way an individual lives and as a person's pattern of living as expressed in his or her activities, interests, habits and opinion. Indeed, lifestyle is the main determinant of health status. After all, *"an estimated 65 percent of health is shaped by a person's lifestyle with 35 percent originating in genetics."* ***Quinn J.***

CHAPTER THREE

# UNDERSTANDING THE BIOLOGY AND DETERMINANTS OF HEALTHY AGEING

*"If you understand the aging process you can take responsibility for slowing it down and enjoying an active and interesting retirement"-* ***National Institute of Ageing, 2012***

Understanding the causes of ageing is fundamental to preparing for an active healthy ageing. The knowledge on how and why our bodies change and what we can do to slow down the process of ageing will certainly assist us in subscribing to active healthy ageing. Indeed, ageing is one of the inevitable experiences all human beings have in common.

There have been several theories on ageing over the centuries. Some of these theories include, cellular clock or preprogrammed, Neuroendocrine hypothesis, Immune system, Wear and Tear, Oxidative (Free radical), Stress, Cross-linking, Genone Error and the list is not limited.

These theories shall be summarized:

i. **Cellular clock or programmed theory**

The theory asserts that ageing is a consequence of the cells in our body system attaining their preprogrammed reproductive limit. It is this reproductive limit that causes some of changes we observe as we grow old.

ii. **Neuroendocrine hypothesis ageing theory**

This theory is based on the fact that hormone levels change as we grow older. It is this hormonal changes that determine the rate of ageing. Menopause and andropause in women and men respectively are examples of age related hormonal change of estrogen and testosterone. These hormonal changes subsequently result in ageing and easy susceptibility to disease such as osteoporosis. The shrinking of height and lack of libido are as a result of decline of these two sex hormones.

iii. **Immune system theory**

This theory suggests that the body immune system (BIS) that protects the body from infectious disease and viral attack becomes less effective as we grow old. The decline of immunity cells will definitely make the body more vulnerable to non-communicable chronic diseases such as cancer in addition to other infectious diseases. Cancer, regardless its site is as a result of failure of the BIS to detect and destroy these cancer cells from multiplying to form tumors.

The BIS can be weakened by poor dietary intake, emotional strain, loss of sleep, smoking, environmental pollutants, refined white sugar, sedentary lifestyle and

ageing. Once the BIS becomes weak, the cells are easily damaged thereby making the body prone to both communicable and non-communicable diseases.

iv. **The wear and tear theory**

The theory advocates that the genetic materials (Deoxyribonucleic Acid (DNA), Ribonucleic Acid (RNA) have telomeres at the end of their strands. These telomeres protect the genes. But each time a cell divides or reproduces, these protective caps lose some of their parts. This loss makes the telomeres to be shortened. The shorter these telomeres become, the more the cells can no longer divide efficiently, the more the telomeres can no longer reproduce hence the more rapid the ageing process.

v. **Oxidative (free radical) stress theory**

The theory suggests that free radicals (an atom or group of atoms with unpaired electron) are toxic by-products of cell metabolism or oxidation. It is these free radicals that cause damage to the genetic materials (DNA and RNA) and this damage may cause cell death. Some of the sources of these free radicals are hydrogenated foodstuffs, processed foods and excessive refined sugar consumption.

The antidotes to free radicals are phytochemicals. Phytochemicals are substances found in plant food sources such as fruits, vegetables, whole grains, legumes and nuts. The phytochemicals include antioxidants (Vitamins C, E, A, Mineral such as selenium). Examples of phytochemicals are Beta Carotene and Alphacaroten which can be gotten from pawpaw, carrots, sweet potatoes, mangoes, allylic

sulfide, food sources include garlic and onions, flavonoids, food sources include all fruits and vegetables, Isoflavones which can be gotten from beans, peas and peanuts. Quercetin, food sources are pear, lettuce, nuts tomatoes, just to mention a few.

vi. **Error theory**

This theory asserts that aging is caused by environmental damage to our body systems which accumulates over a period. Exposure to radiation, toxins and ultraviolet rays can damage the genes.

vii. **Rate of living theory**

This theory is one of the oldest theories of ageing. The theory states that all human beings and other creatures have definite number of heart beats, breaths and deterioration starts to occur once these numbers have occurred. The theory attempts to equate humans beings to machines which start to deteriorate after certain period of use. This theory has been debunked. The new version of the theory postulates that the speed at which an organism process oxygen determines its life span. The creatures with fast oxygen metabolism have short life span. On the contrary, those with very slow oxygen metabolism have long life span.

viii. **The somatic mutation**

The Theory States that an important factor on ageing determinant is all that happens to our genes (genetic materials) after inheritance from the time of conception. Once conception has taken place the body cells continually divide. Each time these cells divide there is a probability that some of the genes are incorrectly copied. The copying of these genes incorrectly is referred to as

mutation. It has also been discovered that exposure to toxins, radiation or ultraviolet light may also cause mutation. These mutated cells accumulating in the body can also copy themselves and this may lead to ill functioning of the body thereby leading to ageing.

ix. **Protein cross-linking and ageing theory**

The theory postulates that stiffening of the tissues in the body is as a result of bonding of sugar molecules to protein. This process is known as carmalization. This is a process that leads to a series of reaction in the body that is called glycation. Glycation is the bonding of protein molecules to each other. The procedure occurs slowly in the body and it can accumulate in one of the specific tissue. These specific tissues include lungs, arteries, cartilage and tendons. The proponents of this theory were of the opinion that many of the symptoms of ageing were as a result of stiffening of the tissues. Cataracts for example, have been adduced to be due to the stiffening of the eyes' lenses.

There are other postulated theories on ageing which are not covered in this chapter. The essential theories have been expatiated to have an idea about the biology of ageing.

**Determinants of Healthy Ageing**

Ageing is a lifelong process and varies in its effects from individual to individual. Ageing has both the positive component of development and the negative component of decline. Changes occur in human life. Changing demographic transition stages have affected the population of the elderly worldwide. Developed countries tend to be at the later stage compared to the pattern of

developing nations, resulting in a large number of elderly people within a yet dwindling population.

In WHO's framework for active ageing, many determinants come into focus, each interacting with one another to affect the process of ageing. Inter dependence among these factors would determine which way and how far the various factors influencing health of the elderly would go. The elderly suffer from multiple pathologies, some of which are influenced by factors not present in the immediate environment of the elderly. As a result, the elderly become ill more frequently, have to live with more chronic diseases or problems, and are generally trying to fight against several health problems at once, resulting in an increase in the number of medications taken.

The determinants of healthy ageing identified in this WHO framework include:

1. Physical environment determinants of health ageing include housing, safety of home environment, clean water/air, safe foods and mothers. A significant proportion of diseases affecting man have been linked to availability and quality of water consumed by the general population, as well as the level of sanitation in the environment. A filthy environment would breed vectors of diseases and could facilitate transmission of many infectious diseases. Malaria, most especially, is endemic in developing countries.

2. Social environment determinants such as, social support, violence, abuse and education. An elderly with support right from his house, extended family care and

community support cannot be compared with an elderly person without support. This comparison could be in the areas of primary care, breaking barriers to accessing care as well as coping with the numerous challenges associated with elderly age group.

3. Personal determinants such as, biology, genetic, psychological factors. These inherent biological factors could be influenced by a lot of other health related factors, elderly person with hypertension or diabetics running in his or her family may be based on genetics and this may eventually affect his health and success of care.

4. Economic determinants such as, income, social protection, work. The purchasing and economic power of the elderly and that of his family whom he depends on is a pointer to the quality of care and support that the elderly would receive. It may also affect attitude to care seeking, purchase of drugs and nutrition that would boost immunity, and subsequently disease prevention.

5. Behavioural determinants such as, tobacco use, physical activity, nutrition, alcohol, oral health, medications. These factors are mostly issues dealing with lifestyle changes, majority of which are acquired.

6. Health and social service system determinants such as, health promotion and disease prevention, curative services, long-term care, mental health services. This factor is worsened by a lack of geriatric centers in most health facilities in Nigeria as well as human and material resources to sustain these features of elderly care even after death.

7. Culture is a 'cross-cutting' determinant which shapes the way we age and influence all the other determinants of active ageing. It includes beliefs, morals, laws and customs that different communities are known for. All communities cherish good condition of health, respect and treating the elderly with dignity and pride.

These may be the common determinants of healthy ageing. Attempts have been made to add other dimensions that could determine the health of the elderly population.

The spiritual aspect of the health of the elderly and its effect on survival and coping with environmental stress has been identified. This may be more relevant when the issue of relating with others, the concept of dying and issues of terminal and palliative care come to focus. Legal determinants have been advocated for by many stakeholders in elderly care. Elders are prone to abuse and also violation of their human rights. Since this negates the principle of fundamental human right, it is an issue that should be taken very serious.

CHAPTER FOUR

# PUBLIC HEALTH: IMPLICATIONS OF GLOBAL AGEING

*"Ageing is widely seen as one of the most significant risks to global prosperity in the decades ahead because of its potentially profound economics, social and political implications"* ***Pr. Schwab, K.***

The United Nations Development of Economic and Social Affairs reported that the population of the elderly shall continue to increase as long as birth and death rates continue to lower. In fact, it has been projected that by the year 2050, one out of five and by 2150, one out of every three persons will be 60 years or older. Perusing the above quotation, it is obvious that if the United Nation Development projections become a reality, it will not only have adverse, public health implications, but also social, economical and political implications.

## Ageing Population and Public Health Implications

The pivot to healthy ageing is good health. Life long health promotion and prevention of non-communicable diseases are essential if the elderly people are to

contribute meaningfully to family and community life.

More importantly, in order for the elderly to avoid physical and mental disability and to remain independent, good health is the panacea. Prior to our discussion on public health implications of global ageing, it is important to differentiate between 'growing old' and 'getting old'.

Growing old simply connotes maturity in thinking processes, maturity in human relationship and maturity in confronting challenges of life. On the other hand, getting old is perceived from the materialistic approach. When any of the household materials get old, we see them as being no longer useful or out of fashion. By claiming to be getting old simply means that one may be careless in taking good care of his or her body. It should be apparent the difference between these two terms is the healthy status of the individuals.

**Public Health Implication of Global Ageing**

It has already been projected that the elderly population shall be the majority if the declining of birth and death rates continue. The elderly population shall continue to increase because of advances in medical science and improvement in standard of living. What does this mean to the elderly and population at large?

The health implications for the elderly population include the following:

i. Unless there has been life-long health promotion and disease prevention culture that have been built in individual elderly persons, there will be higher morbidity and mortality. These higher morbidity and mortality

rates could be due to non-communicable chronic diseases such as adult diabetes mellitus, stroke, hypertension, vascular diseases, congestive heart failure, high blood pressure, coronary artery disease, prostate cancer, breast cancer, bowel cancer, colonic cancer and obesity.

ii. Health expenditure on the elderly population. One of the crucial impact of the increasing population of the elderly is on health expenditure. The health and functional status of the elderly population solely depend on health care utilization. This health care utilization has been documented to be significantly increased as age increases. The table below depicts total health expenditure among 65 years and above group.

**Table: Total Health Expenditure Among 65 years and above age group**

| Year | *Govt. % Total Claim Health Expenditure* | *Household Total Health Expenditure* |
|---|---|---|
| 1998 | 6.5 | 31.0 |
| 1999 | 8.5 | 33.8 |
| 2000 | 11.5 | 39.9 |
| 2001 | 19.9 | 44.9 |
| 2002 | 31.0 | 52.3 |

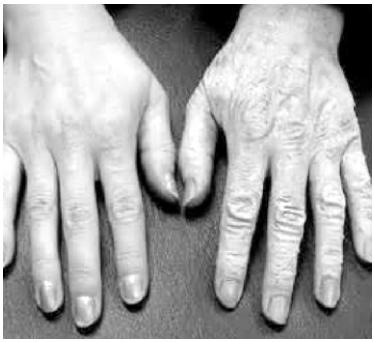
Scrutinizing the above table, it is apparent, that health expenditure increased tremendously from 1998 to 2002. The health household expenditure also increased greatly on yearly basis. This health household expenditure puts a lot of pressure on the family limited income. The inference from this high health household expenditure is reduction in consumption of quality foods and other household goods. The lack of health insurance, and social security for the elderly may actually expedite the morbidity and mortality rates among this vulnerable group. Older people have been reported to consume more health services on the average than any of the vulnerable groups (children under-five, pregnant women and adolescent.

In spite of the increasing population of the elderly in Nigeria, there is no specific government policy on caring for their health insurance, social security, purchasing of drugs provision of food items and other essential needs that may guarantee quality life. The National Council on Health in Nigeria did resolve and approve that geriatric health services units should be established in all public health facilities. This resolution has not been implemented as at 2012, though it has been approved over three years.

The predicament of the elderly population is well illustrated in the Minister of Health's speech during the World's Health Day celebration in 2012 - *"In the presence of competing health needs, the aged are relegated to the background and seriously threatened by poverty, want, deprivation, abuse, ill health, social exclusion, loneliness and suffering amongst others"* ***Prof Onyebuchi Chukwu,*** *Minister of Health.*

Nigeria being the most populous country in Africa, she

has the highest elderly population in some sub-Sahara African Region. The need for an immediate implementation of geriatric health service by establishing Geriatric Clinics like other vulnerable groups should be given immediate attention.



CHAPTER FIVE

# THE COMMON SIGNS OF AGEING PROCESS

*"As we grow older we need to consider that 'How' we grow old is far more important than how old we grow."* ***Riley M.***

It is important to note that chronological age should be viewed with less concern. Rather the major concern should be how we grow old. How do we know that we are growing old? What are the signs we should note as we grow old? Knowing some of these signs will definitely assist as to prepare for reducing the severity of these symptoms of ageing process. Some of these signs are listed below:

i. As one grows older, the skin becomes dry, wrinkled, thinner and less elastic.
ii. Bones become more visible as one stores less fat beneath the skin.
iii. Muscles become weak. More so, when the muscles are not fully exercised.
iv. Cognitive ability reduces when the brain is not fully regularly engaged at earlier years.
v. Forgetfulness becomes regular practice, which may be caused by underlining disease or poor

dietary and physical activities.

vi. A slowed reaction time.

vii. A weakened immune system.

viii. Diminished sense of taste, smell or hearing.

ix. Hair becomes thinner and changes colour.

x. Some of the brain regions shrink while others remain stable.

xi. Vision becomes blurred because of visual problems such as cataracts and glaucoma. Cataract is a biochemical change of the lens of the eye's structure. Glaucoma is a disease of the eye that is precipitated by intensive destructive pressure of fluids inside the eye. This may eventually lead to wasting of the optic nerve and blindness.

xii. Blood vessels lose their elasticity and fatty deposition on the artery walls. This fatty deposit makes the arteries small or narrower and reduces blood flow to the heart. This condition may lead to hypertension, arteriosclerosis, cardiac arrest and other heart disease.

xiii. Reduced physical activities.

xiv. Possibility of increasing body weight due to reduced physical activities.

xv. Low hormonal levels in both men and women leading to andropause and menopause respectively. The reduction in these hormones (testosterone and estrogen) actually resulting to shrinking in height. The list is not limited.

Being aware of these signs is to be prepared for the battle ahead if one is not yet in the category of elderly population. Those that are now in this prestigious category can begin to search for various ways of reducing the effects of these symptoms.

CHAPTER SIX

# CHALLENGES FACING THE AGEING POPULATION

*Never lose sight of the fact that "Old age needs so little, but needs that little so much"* ***Willour Margaret***

It is apparent from the foregoing that growing old poses both overt and latent challenges. Overcoming any of the challenges depends solely on the various lifestyles of this vulnerable group. Being physically inactive, poor dietary habits, being over weight or obese, negative thinking, high blood pressure, high blood sugar level, abnormal blood cholesterol level, smoking cigarettes, excessive alcohol consumption, drug abuse, exposure to stressful environment and irregular medical and fitness check ups can definitely worsen these challenges.

Examining the previous chapters diligently, it is certain that the elderly are constantly being challenged in the course of attempting to live an independent, participatory and peaceful life. These challenges can only be overcome with healthy lifestyles. This chapter x-

rays the social, pathological (health), economic, physiological, psychological, nutritional and spiritual challenges confronting the elderly population.

**Social Challenges**

The emerging issue of increased population of the elderly world over has created increased health care expenditure that governments are grappling with. The inability of governments to regularly pay retirees their pensions is now a present and future challenge. In most of these governments establishments, especially in developing countries, the provision for social security for the retired workforce is still a mirage. The irregular pension payment and lack of social security for the elderly retired workforce have created customary extended family support for them.

The traditional family function to take care and give social support to the elderly have been gradually decreased due to economic problems, influence of western culture and migration of young ones for better green pasture. The traditional extended family structure has now been overtaken by the new nuclear family structure, the nuclear family signifies the husband, the wife and children. The older people are to live by themselves or they are put in residential nursing homes for older persons. The idea that investing in one's children so that they could provide social security in old age is now being gradually eroded.

The fact is that older people, especially in African countries would rather prefer to stay with their children rather than being placed in nursing or institutional homes. Placing them in Nursing homes may affect their social patterns.

Lena and Collogues (2009) were of the opinion that *'Urbanization, nuclearization of family, migration, and dual career families are making care of the elderly more and more of a personal and social problem in both developed and developing countries.'*

The changes in the economic status of the elderly do affect their way of life, especially, after retirement. The social recognition prior to retirement is bond to be significantly reduced because some social functions require financial resources. Attitudes of the family to the elderly could also affect the daily activities of the older population. If the attitude towards them is negative, they may feel they are a burden to the family. This may lead to latent sadness which in turn may turn to illness.

The other latent social problem is sadness that is being generated either for not having children or a male child. It is believed that male children would take care of the elderly than female children. This idea is not true because female children are more caring and supportive than their male counterparts.

The inability to make friends after retirement by the elderly population has also been identified as one of the social challenges. The elderly people are found to prefer staying by their close associates, such as their spouses or close relatives. But making friends outside the home has been shown to be a challenge. Whereas, a lot of social connections have been attributed to healthy active ageing.

Neglect of the elderly is another social challenge that should be dealt with. Most times, children do not pay regular visits to their older parents.

It has been documented that the social problems of the elderly population have been precipitated by three factors. These three factors are labeling, the concept of work as the criterion for personal value and economic deprivation.

Ageing is now seen as a social problem simply because various government institutions are finding it difficult to meet the needs of these vulnerable and dependent elderly population. The elderly population are being stereotyped because they do not conform to the present youth oriented culture.

The industrial revolution has shifted the value of experience which is accumulated by age to factory ability to produce. The production depends on strength and fastness. The young ones are faster and have plenty of energy to produce than the elderly. Hence, the younger ones make more money and are valued more than the elderly. The elderly population being in the minority group, can be victims of discrimination, prejudice, physical and mental abuse and loneliness. It is apparent from the foregoing that there is dire need for effective social security policies that will cater for both felt and unfelt needs for this vulnerable group that is rapidly increasing in developing countries.

**Health (Pathological) Challenges**

The health status of individuals at 20-50 years and above will definitely be different in terms of physical strength and fitness. The reasons for these changes are basically due to decreasing level of the body's immune system, lifestyles, hereditary and environmental factors. The health challenges confronting elderly can be well

managed if only every individual takes good care of his or her body physically, nutritionally and spiritually. These three interrelated topics are the panacea to active healthy ageing.

The International Communities haven been consistent in drawing the government of both developed and developing countries to the increasing ageing population, and socio-economic complications. For example, the Viena 1982 world assembly on the elderly, did make useful recommendation on various ways of ensuring quality health for this vulnerable group as well as consumer and environmental protection among others.

Other conferences of special concern for the elderly include United Nations General Assembly, 1991; Cairo International Conference on Population and Development 1994; International Federation of Elderly 1998; the present and future health challenges were brought to the fore for all governments to seek solutions.

The most common health challenges among the ageing population include the following:

i. Cardiovascular Diseases (hypertension, high blood pressure, vascular disease, coronary artery disease, congestive heart failure.

ii. Obesity: It has been reported that about seventy five per cent of adults aged 60 and above are overweight, body mass index (BMI) greater than 25 but less than 30; or obese, BMI greater than 30 but less than 40. Incidentally, Obesity has been linked to type 2 diabetes, cardiovascular disease (CVD),

breast and colon cancer, gall bladder disease and high blood pressure.

iii. Metabolic syndrome (MS) also known as X syndrome has been asserted to be prevalent among forty percent of adults aged 60 and above are prone to metabolic syndrome. This syndrome predisposes the elderly to developing diabetes mellitus, CVD and some forms of cancer.

The modified characteristics of MS are as follow:

a. BMI within 25-40.
b. Waist measurement greater than 40 inches (102cm) in men and 88cm or 35 inches in women.
c. Tryglycende level of 150mg/dL or higher.
d. High density lipoprotein cholesterol, ''good'' cholesterol level less, than 40mg/dl in men and 50 mg/dL in women
e. Blood pressure of 130/85 or higher
f. Fasting glucose level of 110mg/dl or higher
g. Waist-hip Ratio greater than 0.91 in men and 0.81 in women.

Waist/Height ratio greater than 0.50 irrespective of age or sex.

It should be noted that weight reduction through healthy habits, such as reduction of calories and alcohol intake and regular physical activities are the surest avenues of preventing MS.

iv. Arthritis: This is a condition that presents itself by swelling and pain of the joints (inflammation). This condition is commonly observed among the elderly

population. It is the major cause of disability. One of the factors that precipitates arthritis is excess body weight. Regular exercise is one of the prescriptions for minimizing the effect of arthritis. Arthritis may also be as a result of infection (gonococcal, tuberculosis, pneumococcal); rheumatic fever and trauma.

v. Osteoporosis: This is another common condition among the elderly whereby the bone becomes more porous or soften. The older one becomes, the more he or she needs more certain minerals such as calcium and vitamin D. There is the tendency for older individuals to be deficient in calcium, hence the need for adequate eating habit coupled with regular physical exercise.

vi. Adult diabetes mellitus (Type 2): This is a common disease among the elderly. It has been attributed to increased excess body weight. The decreased physical activity coupled with lack of control of caloric intake as one add more years has been linked to diabetes. The characteristics of the disease include frequent urination, excessive thirst, general weakness and dry skin.

vii. Urinary Tract Infection (UTIs): The UTI is characterized as the urge to urinate frequently or urgently. Other symptoms include complaints of discomfort while urinating; cloudy dark or foul smelling urine. UTI occurs when the bacteria in the bladder or kidney multiplies in the urine. The elderly populations are more vulnerable to UTIs. If this condition is not treated in time it may lead to

fatigue, unexplained incontinence or changes in behavior and mental status. The susceptibility of the ageing individuals to UTIs is due to suppressed immune system that accompany with age and age related weakening of the muscles of the bladder. The suppressed immune system and weakening of the bladder muscles leads to more urine being retained in the bladder and in turn poor emptying and incontinence. Diabetes, enlarged prostate, caffeine and excessive alcohol consumption are some of the predisposing factors to UTIs among the elderly.

viii. Breathing problems: according to baltimore longitudinal study on ageing, lung tissue starts to lose its elasticity of the muscles at about the age of 20 and the muscles of the rib cage gradually begin to shrink. The consequence of this phenomenon is the reduction of air in the lungs. More importantly, most of the elderly population do not know the proper method of breathing through the abdomen. Shallow breathing is prevalent among the elderly. Consequently, this may lead to consuming inadequate oxygen. Increasing oxygen intake at the cellular level can result in effective weight loss. The interaction between oxygen atoms and fat molecules results in oxidation and the products are carbon dioxide and water.

Inadequate intake oxygen can also lead to frequent tiredness and adverse effect on mental capacity.

ix. Dementia including Alzheimer's disease is one of

diseases in some ageing population. It is a deteriorative mental state that is characterized by confusion, forgetfulness, irrational behaviour and childishness. This disease condition has been reported to be reduced with adequate nutrition intake and regular physical exercise.

x. Depression: This is a common health challenge among the elderly who lack family financial or social support, who have suffered the loss of loved ones, inadequate feeding, disability, fear of unknown, and unexpected disappointments from relatives. Depression is characterized by sadness, dejection and low spirits or vitality. The condition can be minimized by regular physical exercise, adequate dietary intake, financial support, family support and social support.

xi. Poor visual acuity: poor visual acuity that includes cataracts and glaucoma as a result of ageing process. Cataract is an opacity of the lens of the eye. Glaucoma is one of the common causes of blindness as a result of intense destruction of fluids inside the eye.

xii. Some forms of cancer: Both breast and prostate cancers are prevalent among the elderly. Attributing factors have been linked to depressed body immune systems, obesity, poor lifestyle, unhealthy dietary habits and sedentary lifestyle.

xiii. Poor hearing acuity: Poor hearing ability has been linked to the ageing process. This condition can be due to underlying infections.

**Financial Challenges**

Financial challenge is one of the prominent obstacles in promoting active healthy ageing. In the absence of financial resources, elderly individuals are prone to be depressed and vulnerable to psycho-social and diseases associated with ageing. Economic status adversely affects the elderly individual's way of life particularly after retirement.

Retirement brings reduction in the income of the elderly. The financial challenge is further aggravated in a situation where the elderly person does not have either the family, children and government support. In countries where there are social amenities and regular monthly social security, the financial burden is not all that severe. But in some developing countries where monthly pension payment is irregular and there are no social amenities for the elderly, the financial challenge becomes a Herculean task.

**Physiological Challenges**

One of the main differences between a youngster and an older person is that in the former, the rate of physical activities is higher than the later. Physiological functions of the body decline as one add more years. The strength that is the force generating ability of the skeletal muscles is reduced in the elderly. This reduction is primarily caused by muscle atrophy (reduction on in size). This loss of muscle mass, strength and endurance in the elderly pose some challenges to the elderly. The decline in the normal functioning of the body translates into poor mobility, indigestion, inability to secure adequate nutrition, decline in memory and predisposing to obesity. Once the physiological function declines it

affects other important organs of the body system. When the motor units are decreased, it also leads to decrease in joint flexibility. The frequent falls among the elderly is a real challenge that should be prevented because it can result in fractured limb.

Sitting down for more than forty-five minutes, to get up instantly can prove to be a task for the elderly. Coming out of the vehicle has to be carefully negotiated. In addition the power of urination and emptying of bowel decrease among the elderly. All these happen because of the mass decrease in the functions of the muscles and the strength capacity of the skeletal muscle also decline. Immediately the motor units begin to decline, they lead to reduce joint flexibility which in turns leads to the joints being stiff and mobility is hampered. One of the surest avenues of minimizing the effects of this decline is to be involved with regular physical activity. We shall discuss the benefits of physical activities in subsequent chapters.

**Psychological Challenges**

The elderly are exposed to different psychological challenges as they wade through life. Psychological challenges are pertains to how the challenges are being accepted in the mind of the individuals. The reactions of the challenges can be positive or negative. The abnormal reactions to these challenges can manifest in the form of depression or dementia including Alzheimer's disease.

It should be noted that a loss of mental acuteness among the elderly should not be assumed as a sign of old age. The loss of mental sharpness could be due to either depression or dementia. But note that depression is not

an inevitable part of growing old. The definitions of depression and dementia have already being described under health challenges.

The period of old age, especially during retirement can pose enormous emotional challenges which are similar to psychological challenges. These emotional challenges can ultimately lead to either depression or dementia. More so, when such elderly individuals cannot adjust to changing economic status, changing his environment, gradual disability, sudden illness or the consciousness of losing his or her potency.

Differentiating between depression and dementia is essential in an attempt to strategize preventive programmes.

| Symptoms of Depression | Symptoms of Dementia |
|---|---|
| Mental decline is relatively rapid | Mental decline happens slowly |
| Knows the correct time, date and where he or she is | Confused and disoriented, loss in familiar location |
| Difficulty in concentration | Short-term memory loss |
| Difficulty in concentration | Short-term memory loss |
| Language and motor skills are slow but normal | Writing, speaking and motor skills are impaired |
| Notices or worries about memory problems | Doesn't notice memory problem or seem to care |

***Source:*** *http://www.helpguide.org/mental/depression_elderly.htm*

**Causes of Depression**

i. Health problems such as illness, disability, chronic pain and chronic non-communicable diseases such as type 2 diabetes mellitus, obesity, arthritis, hypertension, stroke, prostate, breast or colonic cancer.

ii. Fear of ill health that may lead to chronic invalidism that may lead to depletion of limited income.

iii. Fear of death or dying.

iv. Loneliness and isolation. Being alone or living in nursing or institutional homes for the elderly may result to limited association with relatives and friends of many years.

v. Reduced sense of achievements. Loss of identity due to physical limitations or activities due to retirement.

vi. Bereavement. Death of close friends, family, or loss of a spouse.

vii. Medication. Regular medications due to certain chronic medical conditions such as ulcers, high blood pressure, heart diseases, stroke, cancer, diabetes, thyroid disorders and dementia.

**Causes of Dementia**

Some of the causes of dementia include the following:

i. Diseases and infections, stroke, head injuries, nutritional deficiencies and drugs.

ii. Damage to the brain cells in both cortical and sub cortical areas.

iii. Alzheimer's disease is one of the common causes of dementia.

iv. Vascular dementia is second to Alzheimer's disease as a cause of dementia. This type of dementia is precipitated by atherosclerosis or hardening of the arteries in the brain. The blood flow to the brain is blocked due to the deposits of fats, dead cells and other debris inside the arteries. This vascular dementia is also connected to high blood pressure, heart disease and diabetes.

v. Brain tumors can also cause dementia symptoms.

vi. Exposure to toxic materials. Exposure to heavy metal dust, fumes and solvents, without adequate protective equipment may also lead to dementia.

vii. Nutritional deficiency in vitamins such as vitamin B complex can cause dementia if the deficiency prolongs for a long time.

viii. Drug reactions due to over use, abuse or misuse of drugs can lead to dementia. Sleeping pills and tranquilizers are major precipitators when misused.

ix. Chronic alcoholism. Dementia is commonly observed in chronic alcoholic patients due to liver diseases and nutritional deficiencies

Some of the Strategies to prevent dementia and depression include:

i Provision of functional geriatric care by

establishing geriatric clinics just like that of paediatric and obstetric clinics. Provision of such a clinic will provide early detection of these conditions in this vulnerable group.

ii. Controlling blood pressure. The blood pressure should be kept lower than the accepted 120/80. Reducing the blood pressure will reduce the strain on the brain.

iii. Deep breathing . The act of breathing properly should be initiated among the elderly population. Deep breathing ensures boosting plenty of oxygen to brain. Breathing from the lower abdomen instead from the chest will ensure proper oxygenation of the brain.

iv. Exercise. Regular physical activity is compulsory for improving memory centre.

v. Socialization. Connecting with others to share jokes, play cards, going for picnics, reading spiritual books together with friends.

vi. Ensure enough sleep. In addition to meditation on a daily basis, enough sleep is also important in managing mental stress.

vii. Maintain a healthy dietary habit. Consuming fruits, vegetables, whole grains, nuts are good sources of phytochemicals which include antioxidants and micro nutrients. These nutrients help elderly people in improving brain functioning.

**Spiritual Challenges**

Both the Biblical and Koranic perspectives of growing old are quite positive. The two religions warmly welcome being old as a divine intervention. Both the Bible and Koran doctrines shower praises on being old. Caring for the elderly is considered an honour and a blessing. The two religions are in strong support of children taking good care of their elderly parents. In spite of the two religion's doctrines on caring for elderly parents, the elderly population continue to face some challenges as we have earlier noted.

Spiritual challenges are not an exemption. Some of the spiritual challenges confronting the elderly individuals include the following:

i. Recognition of the end of life may occur at any moment. The retirement age time is a reminder that period that follows is full of challenges, more so, when such individuals are not fully prepared economically and physically. The sudden decrease in income and diminishing physical and social activities may lead to declining health which may facilitate the end of life. This may be a time for spiritual needs. The individual needs to come with the reality of the end of life.

ii. Reviewing life events. The more years an individual adds to life after 65 years, the more the need to re-evaluate one's life. The need to reconcile with God, fellow human beings; the need to make peace with those in disagreement; the need to forsake one's sins, and the need to totally forgive those who have offended them.

iii. Processing the emotional aspects of multiple chronic diseases. Some of the old populace may suffer from multiple chronic diseases that may lead to emotional instabilities. In an attempt to cope with these emotional challenges, there is need for spiritual understanding and religious support in terms of praying companions to ease the emotion.

iv. Bereavement management. The old populace are more likely to lose those that are so close with him/her. Coping with emotional grief becomes so important that he or she requires spiritual support to reduce the impact of such loss.

v. The need to still expect better future: In spite of being growing old, the old populace still hoping for better future is an indication of spiritual growth. In cases where the old populace thinks that the end is near and there is no more hope of achieving in life, this signifies poor spiritual development.

**Nutritional Challenges**

Poor nutrition and malnutrition are often prevalent among the elderly population. Some of the causes of this preventable nutritional impairment include:

i. Poor dental health, jaw pain, missing teeth, mouth sore, tooth ache, and improper fitting denture. Any of these ailments will certainly prevent the old populace from eating healthy nutritious foods because chewing will become very painful and unbearable.

ii. Decline in the ability to smell and taste. As one grows above 65 years of age, there are chances that appetite decreases. The declining in the senses of taste and smell automatically adversely affects the joy of food.

iii. Physical disability. Debilitating conditions such as arthritis, physical pain can make the elderly individuals frail and with poor strength. These conditions could make the simple task of peeling of fruit or potatoes and cooking frustrating.

iv. Effects of medications. Some of the side effects of certain drugs among the elderly are reduction in appetite, nausea and making foods taste differently.

v. Financial burden. The elderly have been recognized as one of the vulnerable and poorest groups. The fixed limited income for this vulnerable group also create a financial challenge to purchasing adequate nutritious foodstuffs.

vi. Lack of transportation. Becoming frail or suffering from arthritis may actually limit the elderly population in chopping around for cheaper foodstuffs in their communities. Inaccessibility to regular transportation makes purchasing of foodstuffs a Herculean task.

vii. Loneliness. Being alone does not encourage healthy dietary habits.

viii. Depression and dementia. These ''2Ds'' can also

predispose the elderly to nutritional challenges, skipping of meals at least one meal a day can result to lesser energy intake. This skipping of meals can be due to depression or dementia in the form of forgetfulness.

These detailed seven challenges can be prevented or minimized if every individual, family, state and federal health institutions prepare in advance to cater for the ageing population.

CHAPTER SEVEN

# COMMUNITY ATTITUDES AND PERCEIVED EXPECTATIONS FROM THE AGEING POPULATION

*"A test of a people is how it behaves toward the old. It is easy to love children. Even tyrants and dictators make a point of being fond of children. But the affection and care for the old, the incurable, the helpless are the true gold mines of a culture"* ***Abraham J. Hesches.***

Despite the fact that every individual prays for an active healthy long life, the vast majority of us appear to view the elderly with negative and disdain attitudes. Some experts in gerontology were of the opinion that ageing should not be regarded as a pathological process or as a social offence. After all, according to Nicks J, one of the renown experts in gerontology once wrote, *"Poor health does not have to be an inevitable consequence of ageing."*

Perusing the above quotation, it is apparent that the caring for the old, the incurable and the helpless is truly the hallmark of any culture or the society. In this chapter we shall examine the myths surrounding the ageing population.

Factors that these myths influence are perceived during pre-industrial, industrial revolution, non-western and western cultures and information technology revolution periods shall be examined. In addition, we shall also discuss how the three major religious (Christianity, Islam and pagan) worshipers view and treat their elderly population.

**Myths Surrounding the Elderly Population**

Some of these myths actually portray some of the hidden negative attitudes toward the elderly. These myths can only be corrected through adequate information about ageing to the public. Information on ageing should begin at an early age right from elementary school to all tertiary and professional institutions.

Some of the myths found in literature are listed but are not exhaustive.

i. A dried fish can never be bent.
ii. An elderly person does not celebrate like the youth.
iii. You cannot teach an old dog a new trick.
iv. Younger people tend to be brighter than older persons.
v. Aged persons are physically weak.
vi. Old age is a period of total rest until death strikes.
vii. The old ones are useless because they do not work and they cannot produce.
viii. Intellectual abilities decline with age.
ix. Ageing individual becomes cranky, depressed and withdrawn as they get older.
x. Old age is a period in which even if the spirit is willing, the body is generally weak.
xi. In old age, the brain is not active to carry out

intellect assignment.

xii. There is no future for the elderly.

xiii. The old are sexually inactive.

Most of these myths about the elderly are unfounded. They are only stereotyping the ageing population.

In an attempt to develop a positive and healthier attitudes towards the elderly, we have to dissolve these myths by disseminating the facts about ageing population.

Based on some of these myths, some of the elderly are denied employment. An elderly person should not be judged or evaluated on the basis of his or her age, but according to his or her ability to perform the task. The notion on declining of intellectual ability as one add more years does not hold. According to health experts, only one per cent of the elderly are affected with senility and intellectual capacity remains unchanged until very late in life. Besides, this intellectual capacity depends on its continuous application to various challenges. The more one engages the brain, the sharper it becomes and if it is not used, it certainly declines.

The myth on sudden changes in personality as one becomes old should be taken as incorrect. The Baltimore longitudinal study on Ageing did demonstrate that an adult's personality generally does not change significantly until after the age of 30! The study did buttress the fact that those who were cheerful and assertive when they were younger would likely exhibit the same characteristics when they are old. These are facts that should be disseminated.

**Ageing Perception in Pre-Industrial Culture**

In the pre-industrial period when agriculture was the main source of income, the elderly population was highly respected and honoured. During this period anybody who was above 35 years was regarded as an old person. The reason was that at that time not everybody had the opportunity to reach that age because of infectious diseases and other causes.

Factors that influenced whether a person could be respected as he grow old in the society were good health, mental abilities and the economic status of the person. Whilst older persons were respected for their knowledge and wisdom, one of the main criteria was that such individuals must be observed to be in good health with mental alertness. Consequently, those that were perceived be healthy as they grew old were referred to as "young old". Those that were observed to be in poor health or physical frail were tagged as "old old". This set of elderly with poor health were viewed with disdain and regarded as burden. They were sometimes abused, abandoned and left to die through ritualistic sacrifice or expected to commit suicide.

**Attitudes toward the Elderly Before and After Agricultural and Industrial Revolutions**

Prior to the agricultural revolution, 100,000 generations of people were hunter-gatherers. The hunters were respected and adored by the people. More importantly, they were duly honoured for their prowess in hunting the most fearful animals. People paid homage to the head of the hunters because of his acumen in hunting. The older the hunter, the more the honour bestowed on him. But the invention of digging tools led to improvement in

agriculture and it led to shifting the emphasis from hunting to agriculture.

This revolution led to 500 generations depending on agriculture. The invented digging tools brought about the cultivation of root tubers and bulbs. Animals were domesticated to produce milk and protein food sources. People gradually settled down and were no longer hunters. The respect and adoration for hunters now shifted to the elderly men who had acres of land for farming, large live stocks, acres of cocoa and palm trees. Wealthy elderly persons were honoured, respected and had more social influence in the society.

**Attitudes Towards the Elderly in Non-Western and Western Cultures**

In non-Western cultures, the elderly are accorded with great esteem and respect. The elderly are venerated because of their ages. The respect for the elderly is cultivated right from childhood, siblings from the same parents do not call one another by their names, instead they will add an appellation (brother or sister) irrespective of the number of days one is older than the younger one, the culture does not permit the younger one to call his elder sister or brother by name. In fact, in non-western culture the elders are portrayed as tribal leaders, prophets, saints, wise ones, historians, reservoir of knowledge, healers and peace keepers. In most of the traditional household in non-Western cultures, there is always at least a grand parent whereas, in Western culture, nursing homes are the surest residents for the elderly. In non-Western cultures, it is an abomination, lack of appreciation and indeed shameful to neglect and care less for one's ageing parents.

In the Mediterranean cultures, multiple generations live in the same household. Growing old in most non-western cultures is considered as blessing.

**Attitudes towards the Elderly in Western Cultures**

In ancient Greece and Rome the elderly were extremely respected and honoured for their wisdom. It was the councils of elders that helped rule Greek and Roman societies. Unfortunately, all the respect for the elderly declined during the 5th century. It was in this period that old age was being negatively portrayed whilst the youth was praised and celebrated. Indeed in the Middle Ages, the elderly were considered as burden. The reasons were due to the fact that people were dying very young and food was scarce.

The Industrial Revolution in the 19th century among the Western culture negatively affected the elderly. The perception on the elderly became more negative and the respect and honour once bestowed on them disappeared. Industrial Revolution was specifically geared towards manufacturing. The youths had all the advantages to be more productive than the elderly. On the basis of the above statement, it should not be surprising for Western cultures to lean heavily in celebrating youth. Industrialisation had brought modernisation which has led to a breakdown in traditional family settings. The traditional extended family setting had been totally expunged in Western cultures. The "nuclear" family setting, (father, mother and children) had overthrown the traditional extended family setting.

In some of these Western Cultures, tremendous

emphasis had been laid on self-reliance, independence, individualism, individual freedom, privacy and liberation. While it is the norm in non-Western cultures that the elderly are to be cared for at home until the end, the contrary is the case in Western cultures.

In most of these cultures, the elderly are more likely to be moved to an assisted nursing home or approved nursing facilities. It is interesting to note that nursing homes in most of these Western cultures are springing up at alarming rates and increasingly becoming overcrowded.

**Perceived Expectations from the Elderly**

*"Wisdom is with the aged men with living life is understanding".* ***Job 12:12 (NKJV).***

Despite the numerous challenges facing the elderly coupled with their gradual exclusion from the traditional extended family setting, they are still valuable human resource.

Their resourcefulness solely depend on the government's policies on ageing both at the local, state, federal and international levels. It is the policy on ageing that can ensure the usefulness of the elderly population. After all, this vulnerable group should be one of our national resources because of the experiences they have acquired over the long period of their life span. Consequently, they are venerated in many traditional settings. Is there any expectation for the ageing population? is there still any future for them?

Of course, the answer to these two questions posed above is absolutely yes. Justifications for this answer are as follow:

i. They serve as the foundation of our present community or society.
ii. They are valuable sources of wisdom.
iii. They provide full child care.
iv. They serve as story tellers to impact knowledge to the children.
v. They serve as ambassadors to foreign countries.
vi. They serve as reliable security to private organisations.
vii. They settle both domestic and international rifts
viii. They serve as mentors and motivators for the younger generations.
ix. They serve as consolers at the time of adversity to a family.
x. They serve as custodians of family or town/city history.
xi. They serve as reminders of core values of the society.
xii. They serve as officiating officers at traditional wedding ceremonies.
xiii. They serve as officiating officers in the installations of new kings in a traditional setting and
xiv. They serve as maintainers of family culture and religion.

The expectations from the elderly are not limited to these fourteen points. Examining these listed fourteen points should be an eye opener to governments, civic societies, non-governmental organisations that there are still a lot of tangible attributes from the ageing population we can harness.

**Foundation of our present community or society**

The ageing population are the foundation blocks upon which our present community or society has been built. If we look into the history of any nation, may it be developing or developed, we will observe that the men and women of that time worked, fought tooth and nail and even in some cases laid down their lives for the development or creation of the community or society we are now enjoying. In fact, the elderly are certainly the story link from our past to the present.

**Valuable source of wisdom**

Both the two major religions and traditions recognise the wisdom the elderly population possess. Practically all religions honour and venerate the ageing population. Experience is the best teacher is a popular quotation, but such an experience being referred to is the accumulation of knowledge which has taken so many years to acquire. The elderly being source of wisdom can certainly be helpful in many situations where there are apparent or covert challenges brewing.

**Providing effective child care**

The elderly are very useful in providing child care either for their sons or daughters. Women, especially, are very good in rendering such services because of their previous experiences in caring for children. The services of the elderly can be employed at the day care services or in pre-nursery schools.

**Effective teachers through story telling**

The elderly are very versatile in telling stories that teach children morals and values. The story telling usually takes place during the full moon light. The children sit in

front of the elderly, the story is told and the storyteller will ask the children the moral of the story. This is a very good learning experience for the children because they have to listen with full attention to be able to answer the questions that follow. This act of story telling makes the elderly to be an asset to the children and gives the elderly the sense of being important and contributing to children's intellectual developments.

**Ambassadorial positions**

In most of the diplomatic services, the elderly are usually appointed as ambassadors most of the time. Elderly individuals are presumed to have enough of experience to manage and direct the affairs of the foreign offices.

**Reliable security**

In some private organisations, the elderly are more reliable and trusted than the young ones to man their security outfit. Retired military or police officers are usually preferable to any other person. This is because of their background and experiences in effectively managing security information.

**Arbiter of peace**

Elderly persons are usually noted for their acumen in settling domestic issues between spouses, friends and relatives. Even in international issues such as conflicts, internal wars within a country or between the two countries, the elderly are usually sent to mediate between the two versions.

**Mentoring and motivating the young generations**

The experiences of the elderly in life actually give them

the opportunities to mentor and motivate the young ones to excel in their respective endeavours in life. Sharing with the young their success stories in life can actually motivate the younger ones to do well.

**Consolers at the time of adversity**

Elderly persons are noted for the latent wisdom at the time of adversity. They are usually the spokesmen and women to break adverse news to the unexpected family or relative. They have words of wisdom to help soothe the blow of bad news.

**Custodians of family tribe, town, city, or country history**

The elderly most of the time, have the major historical background of their families, tribes, town, city and even of their countries. Some elderly individuals are even knowledgeable about the world wars history. Without the history of the past, a thorough understanding of the present situation may be difficult. This one of the benefits of having elderly persons at our reach. Learning from them about the background of the family, tribe and the society will certainly assist in understanding our roots.

**Reminder of society's core values**

With the effects of urbanisation, industrialisation eroding the importance of the ageing population, the core values of respect, hard work, honesty, morality, obedience, punctuality and discipline have virtually gone into the wind. Elderly individuals always remind those who are willing to listen that core values of the society have changed drastically. The young ones are in haste to accumulate wealth and they can use any means

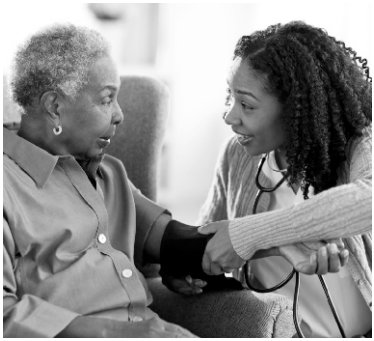
to achieve this wealth. The elderly are so particular about their names because they do not want any thing to ruin family names. These core values being cherished by the elderly sometimes mean nothing to some youngsters searching for wealth at all cost.

**Officiating at traditional wedding ceremony**
In African culture, traditional wedding is an important ceremony that is usually conducted by elderly individuals who know all the rituals to be performed at the ceremony.

**Officiating officers at installation of new kings or chiefs**
In the African culture, the installation of a new king or a chief is usually performed by the elderly who know all the rituals of the kingship.

**Maintaining family culture, tradition or religion** The elderly are very particular about the family traditional culture or religion. The usual thing is that the first male is usually indoctrinated into either the traditional or religious practice of the family by the father.

Perusing the above points it is apparent that the elderly are still very much in need by the society. Most of these functions that are being performed by them can be further expanciated and packaged to generate income for the society. More importantly, most of these expectations will also lead to community participation which in turn may be part of the strategies to minimise the challenges aforementioned.



CHAPTER EIGHT

# ETHICAL, LEGAL AND HUMAN RIGHTS ISSUES IN THE CARE OF THE ELDERLY

*"The rights of one man are diminished when the rights of one man are threatened"* ***John F. Kennedy.***

While taking care of the elderly, some ethical issues may arise that may be important for stakeholders to take note and act accordingly. Ethical issues are central to any discussion or reflection on aging and health care. The universal declaration of human right also applies to the health of the elderly - the right to everything that would make life comfortable for them including essential health care. Nigeria signed the 2002 Madrid International Plan of Action on Ageing which established a global long-term strategy for the care of the aging population. The Madrid Plan calls for a multi disciplinary approach in efforts to take care of the elderly and promote their well-being.

## Ethical Issues Affecting the Elderly

Health care workers experience ethical dilemmas when they find it difficult to know what is the right and good

thing to do (Sorlie *et al* 2000). Ethical dilemmas occur when there are at least two conflicting choices of how to deal with something and neither leads to a positive outcome (Lindseth 1992).

When carrying out tasks affecting the elderly, communities should be aware that they are rationale people, they have feelings and thus should be carried along in issues concerning their welfare and health. Research activities often involve the elderly, and it is important not to take them for granted, and obtain informed consent from them as a matter of research ethics. The elderly like any other persons has the right to refuse participation in research activities, and have the right to commence and withdraw from such research at any point in time. Researchers should be well grounded on ethical issues in research involving the elderly, so it is always important that they get ethical approval for their study before the commencement of research work involving the elderly. All decisions to be taken by the elderly have to be voluntary, and based on information given that would assist him in making an informed choice. A written informed consent is usually desirable.

The elderly with impaired cognitive functions may require taking some additional permission from care givers or from direct relations before using them as research subjects. Researchers should do no harm to them, should remove or minimize risk from the research process and should extend benefits of the research to them. Part of the ethical duty of health care providers for elderly is that they have to educate the public and at the same time keep themselves knowledgeable about long-term care for elders.

**Legal Considerations in Elderly Care**

The elderly have the right to live and even otherwise. Verifying an elderly as dead in the presence of multiple disease conditions need to be clarified. It is important to differentiate between clinical death, brain death (loss of cognitive functions or vegetative state) and whole brain death. Whole brain death constitutes absolute or total death as opposed to a person being brain dead when they are in a persistent vegetative state. Care givers should be cautious when certifying, or when the issue of merciful death or euthanasia arise, a need for a forensic expert may be indicated. It is important to distinguish these from social death which refers to the isolation of an individual from all or any communication with others. The isolation may be self-imposed or can result from ostracism by members of a given community. The idea of putting the elder in old people's homes negates African culture. Tangible efforts should be made to provide better home based health care options for the elderly. Many old people often find it challenging to live in the usual home environment over time. A home that would be suitable for the elderly would require a lot of devices like railings and ramps for wheelchairs. Institutional life or care should not be strictly forced on the elderly.

The issue of suicide may also constitute ethical dilemma in the care of the elderly. Suicides among the elderly are not uncommon. However, younger men and women may use suicidal methods or what appear to be attempts at suicide as cries for help and attention; among the elderly the intent is to end life.

Euthanasia is a serious legal issue, the decisive outcome of which should be a collective one. Because of the right

of clients to live and the uncertainties that surrounds the possibility of death without recourse to suffering, it is important that legal and health practitioners should be present to weigh options available on ground. For example, putting off a life support machine from a subject considered as vegetative is a critical decision and needs both medical and legal interpretations.

Legal incapacity is an invasive and sometimes, difficult legal procedure. It requires that a person file a petition with the local courts, stating the elderly person lacks the capacity to carry out activities that include making medical decisions, voting, making gifts, seeking public benefits, marrying, managing property and financial affairs, choosing where to live and who they socialise with. Unfortunately such legal issues seem far fetched in Nigeria, and most cases eventually fall under the auspices of human rights.

Will-making is an issue of decision-making which many elderly used to participate in. While we encourage such actions among the elderly, it is important that the wish of the elderly should be adhered to when reading his will and when sharing his properties after his death. Thus care providers who served as witnesses and lawyers should be as professional as possible to prevent falling out of ethical consideration that are associated with societal norms and their profession.

The national assembly should make efforts to initiate and pass an elders' rights bill, which will ensure adequate protection of the rights of the elderly. It is also important that legislation pertaining to pension matters be periodically reviewed.

## Human Rights for the Elderly Population

*"Population around the world are rapidly ageing, and it is less developed countries that are experiencing the most dramatic change" -**Dr. Margaret Chan, Director General World Health Organization.***

Undoubtedly, those who are 60 and above shall continue to increase at alarming rate due to improved medicare, education, public health and economic development in both developed and developing countries. In 1950, the population of the elderly in developed countries was 12% and it has shot up to 22% as at 2011. By 2050, it has been speculated to climb to 32%. Similar increase is the trend in developing countries, in 1950, the population was 6% and as at 2011 it has been put at 9% and by the year 2050, it has been projected to rise to 20%.

According to the United Nations Department of Economic Social Affairs, "Due to the trend of lower birth rates and lower death rates, one out of every ten people of the planet will be aged 60 or older. If the current trend of lowering birth rates and lowering death rates continues by the year 2050, one out of five people will be aged 60 years or older." The inference from the above prediction is that those that are 60 and above are surely going to become the most vulnerable group, hence the need for a support system for them it is inevitable.

Such support system will include protection that will secure medical, physical, psychological, social, economical and emotional security for ageing population. These protections are very important because they are vulnerable to neglect, physical abuse and ill treatment.

This support system should also include the provision of an enabling environment that will provide the opportunity for the elderly to be more active in the community despite their advanced age. Imaging should also be part of this support system.

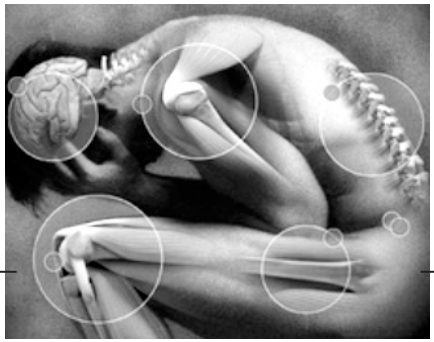
This becomes important because there is the dire need for the policy makers and society to develop or suggest a dignified role the elderly population can partake in the community according to their interest and strength. This will portray them as still contributing to the progress of their communities.

In an attempt to ensure the support system described above, the Rights of the Aged was declared under the Universal Declaration of Human Rights. It reads thus, in Article 25, Paragraph i of the Universal Declaration of Human Rights:

> Everyone has the right to a standard of living adequate for health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other like of livelihood or circumstances beyond his control.

Perusing the universal development of human rights for the elderly, there is no doubt that its implementation is very rare in most of the developing countries. It is the responsibility of the governments to ensure its effective implementation and evaluation and monitoring. The civic society, the international and national non-governmental agencies should be the voice to protect this vulnerable group. They must ensure that this fundamental human rights for the elderly should be adhered to not only in developed countries but also in

developing nations, especially Nigeria, that has the largest population in Africa. It is gratifying to note that attempts to meeting the challenges of the elderly have been in the fore.



CHAPTER NINE

# COMMON ACCIDENTS, INJURIES AND MUSCULO-SKELETAL DISORDERS (MSDS) AMONG THE ELDERLY

*"The safety of the elderly is a major concern in our lives, as falls and fire are common accidents among the older generation"* ***Ben Greenshaw.***

Accidents and injuries are common among the elderly in their day-to-day activities. Though relevant data are not readily available in Nigeria, the number of elderly population needing and receiving emergency care or hospitalization for a range of injuries has increased. While some are fatal, many are unintentional accidents. In Nigeria, many of such accidents are not reported, and relevant data are not routinely kept. It is the role and responsibility of elderly care givers to find a way of preventing and managing these situations whenever they occur. It is also important to remember that many of these common accidents and injuries are preventable, and the care of the elderly should be tailored towards that direction.

Common injuries and accidents include:

i. Falls
ii. Fire related accidents - burns and scald
iii. Poisoning.

**Falls**

Falls are common accidents among the elderly and such presentations are seen from time to time contributing to morbidity and mortality. They constitute a public health problem that is largely preventable. Major immediate effects of falls may include bruising and lacerations, fractures and head injuries. Longer term problems may include reduced functioning, pain, disability, fear of falling, and loss of independence (Hogue, 1982) and premature nursing, hospitalization and may lead to death. The main psychological impact of falls is the fear of further falls and loss of confidence both of which can result in social isolation.

Common causes of falls include confusion, dizziness and vertigo, visual abnormalities, disorders affecting gait and balance while walking and some environment related factors. Further risk factors for falls include past history of falls, gait and walking balance deficits, those using assisted devices, visual impairments, painful arthritis, cognitive impairment and diseases related to the lower extremities

Bone fractures occur when the structure of the bone cannot support the force that is impressed upon the bone during use, and this could lead to bone fracture. Demineralization of ageing may worsen situation leading to these fractures. The Mayo Clinic has listed six ways to prevent falls which include: seeing your doctor, staying

physically active, wearing sensible shoes, removing hazards, keeping your living spaces brightly lit, and using assisted devices. Thus it is important to provide adequate lightening along hallways, landings and stairs, avoid leaving items on the stairs so as not to constitute hazards - they can become a tripping hazard.

**Fire-related Accidents**

This could be as a result of domestic causes including the use of candles, stoves, coal fire, etc. Bush burning and smoking related injuries are not uncommon among the elderly while the poor mobility among the elderly makes escape mechanism more difficult. Poor mobility, poor sense of smell and a reduced tolerance of smoke and burns contribute to fatalities. Major sources of ignition include cookers, materials, candles, coal fires, heaters and electric blankets. It is always important to educate the elderly and institute preventive fire gadgets such as fireguard and smoke alarms. The elderly may sustain burns injury which at times may be fatal. Frail and poor health of the victim are often contributing factors. Solutions include the control or prevention of precipitating cause as well as installing anti fire gadgets. Health care workers should ask the elderly to be careful with smoking materials and try to avoid smoking in bed, fit a fireguard and be conscious of safety precautions as regards smoking and flammable assets

**Poisoning**

This is common among the elderly. Common means of poisoning include drug overdose, food and water over consumption, over consumption of native herbs and suicidal attempts. Contributory factors include low level of education, when the elderly are not monitored or cared

for, uncontrolled habits towards multiple drug purchase and ingestion and elderly persons with history of depression. Medicines, carbon monoxide and pipeline gases predominantly cause accidental poisoning of people over 65 years of age.

**Prevention of Home Accidents among the Elderly**

The majority of accidents in the older age group affect more females than males. It is the responsibility of stakeholders involved in elderly care to find a way around these injuries. Regular exercise could help regain the integrity of the lower limbs and gait balance, while weight bearing exercises and use of drugs such as calcium may assist in bone strengthening. Environmental assessment and modification of hazards at home may be indicated in form of reducing tripping hazards, adding railings on both sides of stairways, adding grab bars inside and outside the tub or shower and next to the toilet, and improving the lighting in their homes. Institutional intervention may also be required and which may require admission into a geriatric clinic for monitored care. The elderly may have to see an ophthalmologist in order to get their eyes tested and if possible correct refraction errors.

## MUSCULO-SKELETAL DISORDERS (MSDs) AMONG THE ELDERLY

Ageing is a period associated with the disease of the bones and joint due to some secondary mechanical wear and tear in the musculo-skeletal system. While many elderly people believe that it is due to the long years of walking around, many of them most especially the educated ones are in touch with reality. Musculo-skeletal disorders are among the most common forms of

human afflictions. They affect all age groups and frequently cause disability, impairments, and handicaps. They consist of a variety of different diseases that cause pain or discomfort in the bones, joints, muscles, or surrounding structures, and they can be acute or chronic, focal, or diffuse. The prevalence of musculo-skeletal disorders generally increases with age, with the majority of persons aged seventy-five and over having some form of musculo-skeletal disorder, especially arthritis.

**Normal Age related changes in the Musculo-skeletal System**

**Bones changes**
In adulthood, bones are formed gradually in terms of mass. As old age creeps in, there is a dramatic progressive loss of bone mass. Thus, the bones are thinner and likely to fracture as found in osteoporosis.

**Joint changes**
The ends of human bones are lined by cartilage which is subject to wear and tear with ageing. The resultant erosion would lead to symptoms such as pains and limitation of movements in affected joints

**Muscles and tendon**
Muscle and tendon undergo atrophy with age, causing them to be weaker. Reduced physical activity resulting from this process further compound the problem. This may lead to joint instability.

Other changes that come with increasing age include impairment of nerves and narrowing of blood vessels leading to a vascular necrosis and vascular accidents.

**Common Presentation of Musculoskeletal Disorders**

Most MSDs are related to trauma, injuries, sprains, wrong use or over-use of the musculo-skeletal system including sudden unaccustomed physical work and habitual bad posture. Common presentations of MSDs are:

i. Pain
ii. Stiffness
iii. Swelling
iv. Limitation of movements
v. Deformity
vi. Disability.

On examination, tenderness, swelling, reduced movements and crepitus in affected pints are usual presentations. Clinicians should always confirm their diagnosis before embarking on case management

**Common MSDs**

***Osteoporosis***

This is a reduction in bone mass, including all components of bone and not just calcium.

***Osteoarthritis***

Arthritis simply means 'inflammation of the joints'. Elderly persons in Nigeria like to use the word 'rheumatism' to describe aches and pains in joints, bones and muscles. Osteoarthritis is the commonest type of arthritis occurring among the elderly. It is a disease of cartilage which becomes eroded and progressively thinned as the disease proceeds. The disease moves slowly from joint to joint.

***Rheumatoid arthritis***

Rheumatoid arthritis (RA) is caused by inflammation of the joint lining in synovial (free moving) joints. It can affect any joint, but is more common in peripheral joints, such as the hands, fingers and toes. RA can cause functional disability, significant pain and joint destruction, leading to deformity and premature mortality.

Others include back and neck pain, most of which are posture and age related.

**Prevention of MSDs**

Musculo-skeletal diseases are among the most common diseases in old age Approximately three quarter of these conditions are minor, self-limiting conditions. Drug and heat therapy are usually used to relieve symptoms, including regular non-strenuous physical exercise. Prevention, they say, is better than cure. So it is always better to prevent the underlying causes of MSDs though many of them occur spontaneously as a result of the unavoidable ageing. Ageing is a phenomenon that is inevitable and unavoidable but it can be made comfortable and rewarding to live to a ripe old age. The orthopedic problems of the elderly can be minimized with treatment. Greater comfort and mobility can be achieved with modern-day surgery and rehabilitation

CHAPTER TEN

# DISEASE SCREENING AMONG THE ELDERLY

*"Today we see a human population of over 6 billion people, many of whom have serious medical conditions, which either can't be treated economically"* ***Ralph Markle.***

Screening among the elderly is a presumptive diagnosis made among apparently healthy elderly persons with the aim of separating those who are positive from those who are negative for that disease. Without screening, diagnosis of the disease can only occur after symptoms develop. However, disease frequently begins long before symptoms occur, and even in the absence of symptoms there may be a point at which the disease could be detected by a screening test.

Screening tests are usually inexpensive, easy to administer, reliable and valid, except in instances of some biological, instrumental or observer errors. However, the disease should be of public health importance, and a reliable method of diagnosis and treatment should be available, even the natural history

of the disease. Thus the health system should take screening exercise to communities in a sustained and integrated manner.

**Disease screening among the elderly**

As the Nigerian population ages, expectation of life and burden of diseases changes. Many of the chronic non communicable diseases associated with elderly life and ageing are preventable. Whether screening will yield appreciable benefits among the elderly is not too certain, but advancing age brings changes that reduce the chance that the benefits of screening will exceed its harms. This is also partly because a risk factor in younger people may not be a risk factor in older persons, and the risk of disease may fall in older people compared to younger persons.

In addition, sensory and cognitive problems, physical disability, and difficulty getting transportation all increase the hardship of getting to places where screening occurs. The World Health Organization (WHO) estimates that about 75% of deaths in people over the age of 65 in industrialized countries are from heart disease, cancer and cerebro-vascular disease (such as stroke) and many of these are preventable through screening. The following screening procedures may be carried out for the elderly in order to keep pace with preventive health services.

i. Eye screening
   For refractive errors, and cataract among others. These could lead to poor sight and eventual fall in the homes.

ii. Breast Cancer Screening with Mammograms
iii. Cervical Cancer Screening with Pap Smear
iv. Colorectal Cancer Screening with Colonoscopy
v. Osteoporosis Screening
vi. Screening for diabetes mellitus using FBS. Under nutrition rather than over-nutrition is the main cause for concern
vii. Screening hypertension by taking blood pressure.
viii. Screening for malnutrition. Under nutrition rather than over-nutrition is the main cause for concern.
ix. Screening for prostatic cancer by taking blood for PSA or rectal biopsy. Prostate cancer (CaP) is the most commonly diagnosed cancer among Nigerian men but CaP screening is not a common practice. The true burden of the disease in Nigeria is not known.
x. Alzheimer's disease is a brain disorder and a slow and gradual disease that begins in the part of the brain that controls the memory. There is no known cause for this disease. As a person grows older, he is at greater risk of developing Alzheimer's. As it spreads to other parts of the brain, it affects a greater number of intellectual, emotional and behavioural abilities.

Diseases to be screened should be of public health significance. The screening test used must be valid, specific and sensitive and should not be too expensive. By screening, using relevant screening test would be appreciable. Preventive primary care outreach may be proactively carried out. These include provider-initiated care, and such care can be provided through home visits, office visits, telephone contacts, or a combination of these methods.

CHAPTER ELEVEN

# IMPORTANCE OF GERIATRIC CARE

*"If you don't design your own life plan. Chances are you will fall into someone else's plan, and guess what they have planned for you? Not much."* ***Jim Rohn***

The population of the elderly is fast increasing. That means that more resources would be committed to elderly care, more doctors will have to know how to treat the ageing population and more public health workers need to do more screening as well as disease prevention. However, the elderly constitutes a vulnerable group, prone to abuse from the public and even care givers. The situation is worsened by the limited number of institutional care centres available, poor community involvement, very few numbers of geriatricians and poor concerns for the elderly in terms of funding and policies. This emphasizes the need to put more emphasis on the health of the elderly and care by all stakeholders.

## Why Elderly Care is Important

Geriatric care would provide the basis for a national framework for the health of the elderly, formulate a multi

disciplinary team approach and tailor it to elderly care. Ultimately, geriatric care would assist the elderly whom we know are vulnerable to social and economic development including prompt health care.

Geriatricians serve as team leaders for a host of health-care professionals including nurse practitioners, dieticians, nutritionists, nurses, physical and occupational therapists, psychiatrists, psychologists, pharmacists and social workers, who together provide well-rounded care for older patients.

There are a lot of other issues that health care providers must consider when treating older patients. Dr. Robert McCann, a member of the American Geriatric Society, said physicians who treat the elderly have to have knowledge of specific diseases and also know how these illnesses affect a patient's functional and psychological state.

According to the Alliance for Ageing Research, the average 75-year-old has three chronic medical conditions and takes five prescription medications, meaning that they share the burden of mortality and morbidity found in the general population. Thus, their care is important and central to the health of other population groups. Thus the elderly constitute an important group in the population, though the biological changes in their bodily systems makes them vulnerable to preventable conditions, as well as predispose them to abuse.

"The fun of geriatrics is looking at multiple variables and looking at the approach to make them better," said Dr. Michael Wolff, a

physician partner in Community Care Physicians and the medical director of Eddy Cohoes Rehabilitation Center, Eddy Ford Nursing Home and the Eddy Heritage House Nursing Center.

**Why the Elderly Constitute a Vulnerable Group to Warrant Care**

There is no doubt that the elderly constitute a vulnerable group in the general population. The target of "Health For All" (HFA, 2000), was to ensure that every citizen live an economically and socially productive life, yet the elderly were not given significant considerations and nobody significantly talked about them.

Most international conferences excluded the topics on elderly as themes and sub-themes, an avenue that would have been used to discuss the medical and social problems of the elderly as well as sensitize the whole world to their plights. Thus, the elderly continue to design coping strategies for their numerous problems.

There is hardly any consideration for the elderly in our national health planning, policies and budgetary allocations. Nobody seems to be thinking about the aged in Nigeria because those who make policies do so in their prime and are often too caught up in the present to know that sooner or later, old age and its complications will soon catch up with them.

However, as age advances, physiological, psychological, mental, economic and social changes become inevitable and pronounced among these senior citizens. The situation is worsened by maltreatment meted out to the elderly by care givers, by the public during

transportation while many funds allocated to elderly care programmes get misappropriated most especially in some developing countries.

The elderly are amongst the most immobile, isolated physically, psychologically, economically, social, spiritually and environmentally handicapped. All over the world this group of persons figure prominently amongst the poor. In Nigeria the extended family cycle is weak and may not be so accommodating to the needs of the elderly people.

Nobody seems to be thinking about the aged in Nigeria because those who make policies do so in their prime and are often too caught up in the present to know that sooner or later, old age with all its complications, will creep up on everyone. In certain communities, the elderly are treated as witches or wizards because of their age; people believe that they must have killed everybody along the way in order to attain such an age, many doctors often disregard the complaints of discomfort by the elderly and just blame such complaints on old age. In addition, NGOs with focus on elderly care are uncommon.

Health insurance does not cover the interests of the elderly in many countries, so affordability is an issue since they are not working. There is a need for government at all levels and relevant stakeholders to come up with a framework and palliative measures to assist the elderly in this country.

As the population of the elderly increases, there is the tendency for more morbidities and mortalities except if

the concerns of this vulnerable population is addressed.

However, with technological breakthroughs and improvement in the health and nutritional status of people, there is a tendency towards longevity. In order to understand how elderly care should be structured, it is important to consider all the relevant factors determining the health of the elderly. Stakeholders in elderly health should focus more on how to address these determinants, as well as resolve issues constituting barriers to ready made access to good and positive health of the elderly population.

CHAPTER TWELVE

# COMMUNITY BASED FACILITIES FOR THE AGEING POPULATION

*"Do what you can, with what you have, where you are."* ***Theodore Roosevelt***

Care of the elderly outside the home is uncommon in Nigeria. Institutional based care appears stigmatizing, meaning that the families have abandoned their elderly for reasons which may include witchcraft. Mostly the communities are not aware of their roles towards complementing efforts of the immediate facilities of the elderly. Many options of such care exists, more commonly in developed countries while some pilot projects are coming up in a country like Nigeria. The fact still remains that the success or otherwise of community or institutional elderly care depends on extent of family involvement, willingness of the elderly in taking part and the relevant values community giving the support.

Old age often brings about health problems and decreasing functional capacity which may affect the

sense of well-being of an individual. In this regard, the goal of health for the elderly in the society may not be that of freedom from diseases but the possibility of having a good life despite illness and decreasing capacities (Lawton, 1991; Nordenfelt, 1991b; Sarvimaki and Stenbock-Hult, 2000). In general, the common observation is that elderly persons value independence, financial security, emotional support and social integration(Bowling, 1994; Low and Molzahn, 2007; Richard *et al.*, 2005; Xavier *et al.*, 2003). Most frail elderly people either for emotional reasons or simple cultural attachments prefer to continue living in their own home environment.

A good efficient and available home or community service is cheaper, easier to coordinate and may also decrease the demand for admission in hospital.

**Forms of Elderly Care**

By most accounts, Nigerians feel no shame in waxing poetry on the elevated status of elders but when it comes down to actively offering help to elders, most people begin to pass the back.

Care giving usually starts from home. These individual or primary care providers include; spouses, children, grandchildren, other family members, friends, neighbours, employed house-helps, community volunteers, members of religious and charitable organizations.

Home based care of the elderly should reduce the burden associated with institutional care. Care giving should be shared among a number of family members, house

helps, neighbours, volunteers etc. so that it does not become too burdensome since these care givers may have their own day-to-day activities.

"The sustained migration of youths from rural to urban areas in search of better opportunities worsens the situation" (Osi-Ogun, 2011). He stated further that as more and more women are taking up different careers in the workforce, elderly persons are usually left in the care of hired house helps. "So, even though they are in their family homes, these older adults spend most of their time alone or with the hired house helps." The extended family system which traditionally should provide care, comfort and social security to the elderly, is gradually waning out and getting weaker and weaker. This necessitates that other care for the elderly should exists as well as take over these roles.

**Community Level**

This secondary level care involves community structures and people whose official duties include the care of the elderly, in hospitals, health centers and special designated houses for the elderly within the community.

**Specialized Care**

This is a tertiary care in institutions. Problems with secondary and specialized care include limited financial resources committed to elderly care, many care givers being overworked most especially those working on part-time or on voluntary basis as they may need to work elsewhere. In addition, many care givers are not specifically trained on the care of the elderly and associated burden of the work, some of them are hot tempered and may constitute maltreatment for the

elderly. Formal care services can be provided by the state, private agencies, voluntary organizations or religious organizations, while the homes provide the informal care.

**Community-based Institutional Care for the Elderly**

For an effective care of the elderly, government at the centre need to enact a national policy for elderly care. This important factor which is absent in many countries of the world would have formed the basis of the establishment of a national programme with the elderly as the prime focus. In addition, there is a need for a standard operating procedure for elderly care, and a national plan of action targeted at the elderly. Issues to be addressed may include but not limited to growing old, better home care service, improved housing and an assurance of an adequate financial income for the elderly. This should also attract a lot of funding from communities, governments, NGOs and the private sector.

Among institutional based social services that could be rendered to the elderly include the following

i. Old peoples' homes.
ii. Day care centre
iii. Geriatric clinic.

In developed nations, these services are readily available. The social services are provided on either residential basis, or are based in the community as in the case of old people's homes and day care centre. As opposed to residential accommodation in the form of old people's homes, day care center are community based residential institutions wherein the elderly person comes

around in the morning until in the evening. At the end of the day, the elderly people return to their respective home after interacting with their peers.

One important aspect of these institutional based care is the availability of recreational facilities like games and media resources. The elderly may also use the opportunity to tell tales to children most especially later in the evening, a scenario typical of the African traditional setting.

Other community based facilities include:

I. Meals on wheels scheme. These are cooked meals transportation to the elderly person's home on weekly basis.
ii. Free bus pass to encourage easy access to public transport
iii. Free medical and dental care to meet the need of the elderly whose income is limited.
iv. Provision of walking, earing and other aids.
v. Free adult health education for the elderly.

There is a need for government at all levels and relevant stakeholders to come up with a framework and palliative measures to assist the elderly in this country. This is important because most aged people, particularly those in the rural areas, are poor, lonely and sick because they do not have people to take care of them.

**Community-based Family Oriented Model of Elderly Care**

This is a socio-medical approach, in which the community in partnership with other community based institutions (such as teaching hospitals, FBOs, NGOs,

etc.) provide family centered care to older persons in the community which can reduce mortality, morbidity, enhance the quality of life and functional status of the older members of our communities. It also reduces the cost of care by preventing diseases and cost of hospital admission or institutionalisation. The challenges of this partnership would include manpower, inadequate infrastructure, poor community participation, poor coordination of care and lack of policy environment to back up some of these actions. Since these challenges could be forecasted, they could also be dealt with accordingly as events unfolds.

CHAPTER THIRTEEN

# DECELERATING AND SLOWING DOWN THE AGEING PROCESS

*"It is our duty to resist old age to compensate for its defects by a watchful care; to fight against it as we would fight against disease and to adopt to regimen of health, to practice moderate exercise-"*
***Cicero***

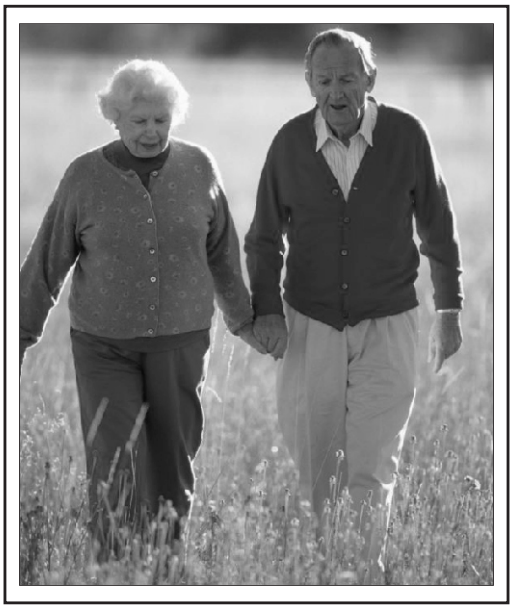
Earlier chapters have buttressed the facts that adding more years after the age of 60 and above poses a lot of challenges. Some of these challenges include aches, pains, wrinkles, sags, bones and joint discomfort, loneliness, inadequate dietary intake, visual impairment, financial and medicare services constraints, cultural barriers and forgetfulness.

Regular physical activity throughout life, healthy dietary habits, consuming portable water in enough quantity, maintaining healthy weight, continuing sexual activity in later years, adopting simple relaxation techniques, avoiding cigarette smoking, abuse of alcohol and drugs, supporting social involvement, cultivating the spirit of total forgiveness, and stimulating the brain can certainly

not only ensure a more active, admirable and healthy old age but can significantly decelerate the ageing process.

The ultimate plan for geriatric care, is to keep the elderly mobile and active. This is the main issue that should always be monitored. Sitting down for a prolonged time on regular basis is hazardous to the elderly. More importantly, arthritis is the number one health challenge for the oldsters. Body movements is a panacea to arthritis. The key issue and challenge to care-givers is that we should always endeavour to keep the elderly moving but it should be at their own pace.

The subsequent chapters shall highlight the salient points of decelerating the ageing process.



## Regular Physical Activity Throughout Ones's Life Span

*"There is no drug current or prospective use that holds as much promise for sustained health as a lifetime of physical exercise"* ***- Dr. Watter Bortz***

The importance of physical exercise to ensure quality life styles throughout one's life span cannot be overestimated. physical exercise is compulsory for both youngsters and oldsters. In buttressing this assertion, go back and read the chapters on the common signs of the ageing process and the health (pathological challenges of the elderly). Most of these signs and health challenges can be decelerated with regular physical exercises at an early age. Muscle mass and bone strength begin to decline after the age of 40 and both accelerate around the age of 50 years. Regular physical exercises can definitely improve muscle mass and bone strength.

Other benefits of regular physical activities specially for those over the age of 65 more than any other age group include:

i. Maintenance of independence
ii. Immediate recovery from illness
iii. Reduction of high risk non-communicable chronic diseases such as cardiovascular heart diseases, type 2 diabetes mellitus, overweight, obesity, arthritis, forms of cancer (prostate, breast, colorectal), hypertension and stroke.
iv. It promotes better feeling and mood control because exercise produces endorphins in the body system. This is a hormone that protects against anxiety and depression.
v. Regular exercises help keep excess weight off and maintain body weight.
vi. Physical exercises improve the immunity system,

self-esteem, self-confidence, emotional stability and frustration tolerance.

vii. Increased brain derived neutrophic-factor (BDNF), has been linked to regular exercises. It improves mental fitness as it increases after exercises. It also serves as fertilizer to the brain neurons and helps them to grow quickly and strengthen their connections. BDNF generation is certainly helpful to the elderly population that may exhibit forgetfulness or mental confusion.

viii. Regular exercise encourages increased metabolism and helps to alleviate constipation which is one of the health challenges of the elderly.

ix. Regular exercise helps the body to get rid of waste products through sweating or perspiration.

x. Physical activity on regular basis guarantees quality sleep. Regular morning aerobic exercise for at least forty minutes five days a week will have less problem in sleeping at night.

xi. Regular exercise helps reduce stress by lowering the cortisol level of hormones associated with stress. This hormone has the ability to impede the activities of the immune system of the body .

xii. Regular exercise provides the best opportunity to prevent some of the hazards of old age which includes, inflexibility, stiffness and immobility. These hazardous conditions may lead to depression and poor quality of life.

xiii. Regular exercise helps in reducing arthritic pain among the elderly. More importantly it helps elderly persons to remain independent and prevents falls which are common causes of fracture among the elderly.

**Goals and Objectives of Exercise**

Bearing in mind the advantages of regular exercise, it becomes important that both the young and old should subscribe to it religiously if the quality of life is to be ensured in old age. It is necessary to understand the goals and objectives of exercise. Basically there are three major goals of exercise which include weight loss and management, physical health and psychological health.

i. ***weight loss and management***

Regular exercise that is combined with healthful dietary habits will certainly lead to weight loss if the individual is overweight or obese. Regular physical activity at least 40 minutes for at least 5 days a week guarantees not only weight loss but also weight maintenance. Weight loss and its maintenance permit better posture and self-confidence.

ii. ***physical health***

One of the main goals of exercise is to maintain physical health. Physical health entails a heathier lifestyle. Regular physical exercise ensures reduction of those non-communicable chronic diseases that include type 2 diabetes mellitus, heart disease, high blood pressure, stroke, back pain and some forms of cancer. Other benefits include prevention of gall bladder disease, arthritis, sleep disorder, visual and mental weaknesses.

iii. ***psychological health***

One of the major benefits of regular exercise is the reduction of stress levels. Chronic stress has been linked to obesity, mental problem, heart disease, some form of cancer, elevated blood pressure, decreased sex drive. Under the episode of stress the cortisol hormone levels

rise and which may lead to neurotransmitters in balance in the brain. Serotonin and dopamine are examples of neurotransmitters. Serotonin levels are increased during physical exercise. It is this serotonin that is involved in neural mechanisms and it is important in memory perception and in preventing insomnia. Physical exercise improves mental ability, well-being and elevated sense of confidence, and better approach to life.

**Objectives of Exercise**

i. ***Strengthening the Muscles***

Training of the muscles assists the body to execute daily activities with easy. More importantly, strengthening the muscles also aids the reduction of fractures due to frequent falls among the elderly. This training in strengthening the muscles increases the metabolic rate and this in turn keeps the weight and blood sugar under control. In fact it gives both the youngsters and oldsters freedom of movement. Examples of strengthening exercise are jumping, climbing the steps, running, jogging, swimming, weight lifting, rope skipping and body rowing.

ii. ***Flexing the muscle***

In the *Ultimate plan for Healthy Living*, the author stated that as an individual add more years, the muscles becomes markedly reduced in flexibility properties. Flexing the muscles helps the body to maintain good posture. Examples of flexing exercise include belly breathing, interlocking finger flexing, cat-like flexing, stretching exercise (sky reaching position, cobra stretching, Hardler's stretch, arm and shoulder rolling,

waist, thigh and arm stretching, stomach and back stretching, push ups and other stretching exercises of different parts of the body).

iii. ***Balancing the body***

Balancing exercise helps to build both the leg and abdominal muscles. Improved balancing of the body increases flexibility and drastically reduces the possibility of frequent falls which is common among the elderly. These frequent falls among the elderly is one of the major causes of fracture. Examples of balancing exercise are balancing the body on the two legs, balancing the body on one leg at a time, hopping on one leg, and squatting.

iv. ***Developing endurance***

Exhibiting the ability to withstand prolonged stress or capacity of bearing up is actually derived from regular exercise that includes strengthening, flexing, balancing and endurance. These exercises work together to produce positive results that guarantee functioning independently and being healthful.

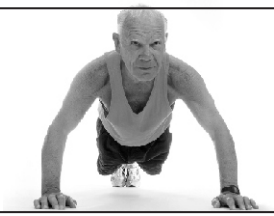
v. Any exercise that increases the heart rate and breathing for a specific time is an endurance exercise. Examples of endurance exercise include cycling, walking, running, jogging, swimming, foot balling, dancing, climbing the steps, running on the spot, rope skipping and aerobic exercises.

vi. **Develop regular enjoyment**

Exercising on a regular basis has not only been linked to a reduction in the of risk of those chronic diseases, but also develops the sense of enjoyment. Dancing, golfing,

walking, jogging or swimming with others presents opportunity for socializing and interactions there by creating avenue for happiness and enjoyment.

It is apparent from the above that regular physical activity throughout a life span is one of the best panacea to decelerate ageing process. It needs discipline, dedication and determination. You will surely enjoy all the benefit, but you must possess all the three qualities (3Ds). If you really want to enjoy your old age socially, healthfully, economically you have to subscribe to regular physical exercise. The choice is yours. Make the right decision and start today.



CHAPTER FOURTEEN

# HEALTHY DIETARY HABITS DECELERATES THE AGEING PROCESS

*"For maximum health and longevity, our diet should conform as nearly as possible to that which our bodies are adopted genetically and physiologically."*

The father of medicine Hippocrates wrote in 400 B.C that *"Let thy food be thy medicine and thy medicine be thy food."* Healthy dietary habits is the main foundation for good health and longevity. The previous chapters have shown some of the challenges regularly confronting the elderly population. Several studies have also shown that almost half of the ageing populations are suffering from malnutrition. We shall therefore consider the following as some of the means of decelerating ageing process:

## Principles that Govern the Feeding Practices of the Elderly

It should be noted that the feeding of the elderly needs special considerations for minimizing their nutritional challenges. Particular attention should be paid to their ability to chew and swallow. More importantly, their

dentures should be regularly screened. Some of the principles that govern the feeding practices of this vulnerable group in order to prevent malnutrition include:

a. Adequate dietary intake.
b. Taking a variety of foodstuffs
c. Consuming nutrient-dense diets.
d. Reduction in energy/caloric intake
e. Consuming food in moderation.
f. Avoiding oily or fried foods
g. Consuming more of alkaline forming foods than acid forming foods.

*a.* ***Adequate dietary intake***

It is important that the elderly should take an adequate diet that contains at least one food item from all the food groups. Food grouping is one of the ways foods are classified. The food group is divided into three; body building, protective and energy giving.

The body building food group contains protein that has all or few of the essential amino acids that the body use as building blocks.

Examples of body building foos are beans, locust beans, soybeans, pinto beans, termites, caterpillars, fish, meat, snails, eggs and dairy products. Protective food group for example are fruits, vegetables, seeds, nuts and oil seeds. This food group comprise vitamins, minerals fibers, and other phytonutrients that ward off infections and prevent the body system from other chronic diseases such as cardiovascular diseases, some forms of cancers and type 2 diabetes mellitus. Energy giving food group supplies calorie which is now known as energy. This

particular group supplies two nutrients referred to as carbohydrates and fats. Examples of energy giving foods are yam, cassava, bread, rice, maize, butter, palm oil and the fatty parts of meat.

Balanced diet means such meals that contain at least one food item from all the three groups mentioned earlier. Breakfast, for example, should be two pieces of yam, some vegetables, an orange or banana and a small portion of beans with crayfish soup.

At each meal, the selection of one food item from all the three food groups must be adhered to in order to have balanced diet.

*b.* ***Adherence to consuming varieties of foodstuffs***

One of the surest avenues to decelerate the ageing process and to stay healthy throughout life, especially during old age, is to stress the principle of consuming different varieties of foodstuffs. The regular intake of foodstuffs in the form of fruits and vegetables of different varieties, beans of all types, nuts and whole grains guarantees quality health and delays the ageing process. This is because fruits and vegetables supply essential vitamins, mineral fiber, antioxidants and other phytonutrients that help preserve the healthy function of blood vessels and also lower the risk of non-communicable chronic diseases. Dried beans and nuts, for example, contain phytochemicals that include antioxidants, vitamins, iron, potassium, protease inhibitors and genisten. The genisten level in the blood has been attributed to lower the rates of breast and prostate cancers. In an attempt to ensure regular intake

of a variety of foodstuffs at each meal, the plate should be divided into four sections. Half of the plate should be made of fruits and vegetables, a quarter for protein and the last quarter for whole grains (maize, wheat, guinea corn and rice).

Another way of ensuring the intake of a variety of foodstuffs is to maintain four different colours in the plate. A plate of rice, beans, green leafy vegetables, pawpaw/orange and fish, for example, presents three colours: green, red, or yellow colour which signifies the presence of beta-carotene which is a precursor of vitamin A.

*c.* ***Consuming nutrient dense food***

The knowledge of nutrient-dense foods actually assists in healthful dietary habits. These items contain other vital nutrients at a minimal quantity of total energy (carbohydrates and fats). Fruits and vegetable are nutrient-dense foods. It is in connection with regular intake of a variety of food choices in moderation that nutrient-dense diets come to play a significant role in maintaining quality health. The intake of dried beans, for example, will supply both energy (calorie) and protein. It is better than taking cassava-based meal, rice or pounded yam. Beans, in addition, is richer in fiber and antioxidants than cassava or yam-flour meals. The best way to ensure that nutrient-dense foods are consumed is to check for nutritional facts on food labels. The quantity of calories per serving an amount of fiber, vitamins, calcium, iron based foods should be examined.

*d.* ***Reducing Energy/Caloric intake***

It is very important to reduce the intake of energy giving foods as one advances in age. Apart from the simple fact that the total energy needs decreases with age because of lowered basal metabolic rate, the physical activities also decline. More importantly, the physiological changes in the body system also affect the utilisation of food, especially, carbohydrate because metabolism is lessened. On the basis of the above, caloric or energy reduction has been documented to be a nutritional anti-ageing toll. The more one eats, the more the body works to process the energy stored as fat to burn and this excess body work has been linked to wear and tear of the body that may lead to ageing. An elderly person with a protruded stomach has actually consumed more than his or her body requires. Therefore, energy-dense foods should be minimised.

*e.* ***Moderation in the intake of food***

One of the surest ways of preventing malnutrition (both under nutrition and over nutrition) among the elderly is consumption of foodstuffs in moderation. A small portion of foodstuffs at each meal helps to prevent over nutrition. More so, when the physical activity levels are at low ebb, higher frequency of small portions of food intake enhances better digestion. Regardless of the food preferences, moderation rule should be applied. The traditional pattern of eating three times daily must not be applied to the feeding of the people because it is appropriate for younger people that expends a lot of energy. Higher frequency of small portions of foodstuffs (4 to 6 times a day) should be the norm for the elderly.

*f.* ***Avoiding oily or fried foods***

It has been documented that the older one gets, the more physiological changes in the body systems. Thus, the metabolic rate is reduced and the functioning of the digestive system also declines. Consuming oily and fried foods will further worsen the digestive system. Constipation has been identified as one of the common nutritional challenges of the elderly. Increased fiber intake in form of fruits, green leafy vegetables and legumes will assist in preventing constipation.

*g.* ***Ensuring alkaline forming diet***

Ideally, the diet of a healthy individual should be more of alkaline than acid forming. The human blood pH should be more of alkaline (7.55-7.45). A pH below or above this range has been ascertained to be an indication for underlying diseases.

A pH of 7.0 and below is referred to as alkaline and acidic respectively. The type of food one consumes may either be alkaline or acid forming foods. In an attempt to maintain good health, the diet is reported to be 60 and 40 per cent alkaline and acid forming foods respectively. Restoration of health is expected to be higher than 60 per cent alkaline forming foods. It can be inferred from the above that alkaline forming foods is ideal for the elderly. Examples of alkaline forming foods are fruits such as apple, avocado, banana, orange, grapefruit, pear, grapes, pineapple, water melon and tangerine, cabbage, eggplant, lettuce, peppers, tomatoes, garlic, onions, sweet potatoes, mushrooms, cucumber, etc. Millet is also an alkaline forming food. Almond seeds are also one of the nuts that is among the alkaline forming food groups. Acid forming foods are animal protein foods such

as beef, fish, lamb, offal, pork, shrimp and oyster. Under the grains, oat, wheat, bread, corn, macaroni, rice and spaghetti have been identified. Practically, all the beans have been listed as acid forming foods. In order to have an alkaline diet, it is important to include more of alkaline forming foods in the diet.

**Nutritional Requirements of the Elderly**

In considering nutrient requirements of the elderly, two terms should be noted: Reference Daily Intake (RDI) and Recommended Dietary Allowance. The former term refers to the quantity of nutrients that form the rationale for planning and assessing diets. In order words, RDIs are not requirements, rather it is an estimated value for protein and key nutrients such as vitamins and minerals.

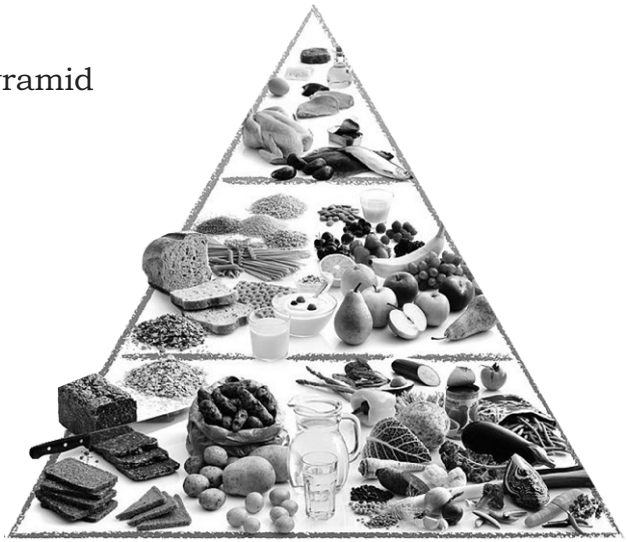
The table below shows the nutrients and the RDIs

| Nutrients | Reference Intake (RDI) |
|---|---|
| Protein | 65g |
| Vitamin A | 5,000 I. U |
| Thiamine ($B_1$) | 1.5mg |
| Riboflavin ($B_2$) | 1.7mg |
| Niacin | 20mg |
| $B_6$ | 2mg |
| Folic Acid | 0.4mg |
| Vitamin C | 60mg |
| Vitamin D | 400IU |
| Vitamin E | 30IU |
| Calcium | 1,000mg |
| Iron | 18mg |
| Zinc | 15mg |
| Vitamin K | 80µg |
| Chromium | 120µg |
| Selenium | 70µg |
| Manganese | 2mg |

*Source: Nancy Clark's Sports Nutrition Guide Book second edition. Sports Medicine Brookline, Brookline, MA. Human Kinetics USA Pg 6*

Recommended Dietary Allowances (RDA), on the other hand, are nutrient values set to maintain adequate nutrition in healthy individuals. The nutrients values are set at a reasonable level to cover the needs of all healthy individuals (NRC). According to RDAs, elderly people have the same nutrient requirements as their younger counterparts. Vitamins D and B6, and Calcium are, however, needed in higher amounts for the elderly aged 51 and above. Energy intake is strictly recommended to be reduced for the elderly. The Food Guide Pyramid (FGP) is a tool that has been reported to be useful to guide the elderly in food selection. The higher one goes on the FGP scale, the lesser food one should consume. One thousand two hundred to one thousand six hundred calories (1200- 1600 cal) has been recommended for those over 70 years of age. The food items should come from whole grains, a variety of coloured fruits and vegetables, low fat, dairy products, lean meats, fish and poultry.

Food pyramid



## Adequate water intake decelerates the aging process

*"Thirst, the body's natural response to dehydration, has been shown to be impaired in older people."* - ***Kenny W L and Chiqq P***

Water, though is generally taken for granted and severely underrated is one of the very nutrients that is essential for health and the best ingredient for slowing down the ageing process. Don Coldert, MD, a re-known family practitioner, author and anti ageing medical expert once wrote in one of his books on health, *The Seven Pillars of Health:* that "Water is the single most important nutrient for our bodies and is considered a "miracle cure" for many health conditions. It is involved in every function of our bodies."

The World Health Organisation (WHO) also recognises the uniqueness of water when it declares, "Water is a basic nutrient of the human body and is critical to human life". Interestingly enough, health experts and researchers do suggest that drinking enough water everyday could reduce the risks of developing cancer of the large bowel, breast and prostate.

### *i.* ***Benefits of Water***

The benefits of water to human beings include:

i. Portable or pure water contains no calories, cholesterol or fats, and hence it does not make an individual to be overweight.
ii. It helps the body to metabolize stored fats and also serve as an appetite suppressant.
iii. It serves as the medium for every biochemical action that takes place in the body.
iv. It maintains the proper acid-alkaline balance that the body requires for optimal functioning.

v. It helps to manage an individual's weight. Poor consumption of water may lead to dehydration which in turn leads to secretion of a hormone referred to aldosterone. This hormone causes water retention in the body.

vi. It is the main lubricant in the joint spaces. It has also been ascertained to prevent back pain and arthritis.

vii. It helps the skin to be smoother and firm. Without adequate water intake, the skin becomes dry and losses its elasticity.

viii. Water assists in preventing memory loss as we add more years. Research studies have shown that the risk of degenerative diseases that include multiple sclerosis, Parkinson's and Alzheimer's diseases are reduced with adequate intake of water.

ix. Water helps in the proper functioning of the brain. It is required for the manufacture of neurotransmitters (serotonin and melatonin).

x. It helps to prevent frequent falls among the elderly. Inadequate water intake may lead to dehydration, which in turn may lead to the risk of dizziness and fainting.

xi. Water helps to prevent chronic constipation. Inadequate fluid intake is one of the major precipitator of chronic constipation. Without adequate water intake, the whole digestive system becomes inefficient.

xii. Adequate water intake helps to prevent kidney disease and gallstones. Adequate intake of water reduces the risk of stone-forming salts. It does this by diluting the urine to prevent crystallisation of stone forming salt.

xiii. Adequate water can also assist in weight loss

by reducing the total caloric intake or by changing the metabolic rate. Taking a glass of water before a meal can lead to reducing the amount of calories consumed because it gives a feeling of fullness.

### *Water Composition of the Body*

The body is made up of 55 to 75 per cent water. Despite the very fact that water is essential to quality health, its consumption has been very low among the young and old. Other fluids such as soft drinks, alcoholic drinks, coffee and teas have replaced it at each meal. Considering the functions of water, one would have thought it should be the priority of every individual regardless of age at every meal; more so, when the various vital organs such as the liver, heart, kidneys, lungs and brain's demand for water is so important that inadequate supply to them may lead to serious consequences. The water composition in vital part of the body is as follows:

a. The brain is made up of about 85 per cent of water.
b. The lungs are made up of about 88 per cent of water.
c. The muscles are made up of about 75 per cent of water.
d. The blood is made of about 82 per cent of water.
e. The body fat is made up of 25 per cent of water
f. The bones are made up of about 25 per cent of water.

The major vital organs of the body have direct linkage with water. Inadequate water supply to them should be avoided in order to maintain, restore and promote a healthy living. It should be noted that water is also supplied from the food we consume. It has been

estimated that an average person's water intake from food is about 20 per cent. Fruits and vegetables also supply water to the body. An Apple, for an example, is 84 per cent water, Bananas are 74 per cent water.

It has also been estimated that 2 to 4 cups of water is lost from breathing. In fact, an average adult loses 10 cups of water through natural body functions (breathing, sweating, and urination). This information shows that every individual, not only the elderly needs water in the right quantity. It should be noted, however, that the elderly needs to cultivate the habits of drinking enough water on a daily basis. This becomes necessary if due consideration is given to the important functions of water in the body system, more importantly, when the natural response to dehydration is impaired among this vulnerable group. The question usually asked by an audience on discussion of the importance of water to the entire body system is the required quantity of water intake on a daily basis.

### *Quantity of Water needed on Daily Basis*

Generally, the elderly should take about 2 to 4 ounces or 8 glasses of water daily. This is far less than the quantity required for healthy body systems and for the deceleration of the ageing process. The rule of thumb says eight (8) ounces of glasses of water everyday. These eight (8)ounces of glasses of water is estimated to be three quarts of water. It should be noted that the body loses about one quart of water through the combination of respiration, sweat and urination. Recent studies from the Institute of Medicine, has recommended 125 and 91 ounces of daily intake for men and women respectively. But for those expose to heat, stress or vigorous activities, more should be taken.

In an attempt to answer the question on the quantity of water to be drunk on a daily basis, Don Colbert, MD., an expert in anti- ageing medicine, did suggest in his book, *The Seven Pillars of Health* that the body weight should be taken in pounds and dividing it by two gives the amount of ounces of water needed daily. Weighing 150 pounds, for an example, and dividing it by two gives 75 ounces of water. It appears from the two schools of thoughts that the daily water intake under normal condition should be at a range of 75-125 ounces for men and 75-91ounces for women. The baseline should depend on the weight of the individual.

If an individual weighs 200lbs, that means that he or she needs 100ounces of water. It is quite clear from the Colbert's calculation that the heavier one is, the more water one needs. This calculation has been estimated to amount to two to three quarts of water a day. Some food items are also sources of water. Such food items are mostly fruits which include banana, apple, lettuce, grape fruit, watermelons, tomatoes, etc.

It should be noted that children need more water because they produce more urine than the adults. It should also be noted that the elderly may need more fluid because of a specific health condition or because they tend to lose their sense of thirst. Health conditions such as diabetes, cystic fibrosis and kidney disease may increase the need for more fluids.

***But what are the early signs of dehydration?***

Dehydration is the excretion of water from the body or tissues more than its intake or when the output of water exceeds water intake. The first sign of dehydration is

thirst. Other signs are fatigue, flushed skin, faster breathing and increased pulse rate. Laboured breathing, weakness and dizziness are later signs.

***But how would you know that you are adequately hydrated or that is you are taking enough water?*** The answers are the colour of your urine which should look like concentrated apple juice, clear or pale.

Water is essential to good health and the consequences of not taking enough of it surely poses a lot of health challenges as illustrated earlier. Decelerating the ageing process calls for regular intake of water at the right quantity on a daily basis.

## Maintaining a Healthy Weight helps to Slow down Ageing

*" But we know enough to say that putting on weight is harming us in more ways than we originally thought! Isn't slowing down the ageing process a great incentive to be a little more choosy about how much and what we eat?"* - ***Noakes, M. and Clifton Peter***

World over, excess body weight has been linked to several non-communicable chronic diseases such as coronary heart diseases, type 2 diabetes mellitus, ischemic heart diseases, stroke, hypertension, obstructive sleep apnea, dyslipidema, gestational diabetes, breast cancer, impaired quicose tolerance, colorectal cancer, prostate cancer, arthritis, osteoporosis and premature death.

Perusing the above quotation by Noakes and Clifton, coupled with the consequences of excess body weight as shown above, it is apparent that maintaining a healthy weight as we add more years is one of the surest avenues

to slowing down the ageing process. Carefully selecting quality foodstuffs in enough quantity coupled with regular physical activity shall definitely assist us in slowing down the ageing process. Indeed, the idea of slowing down the ageing process should be enough incentive to regularly maintaining a normal weight.

**Assessing body weight**

***a. Body Mass Index***

In assessing the body adiposity (excess body fat), the weight and height of the individual are taken to determine the Body Mass Index (BMI). This BMI is determined by dividing the weight (in kg) by the square of height (in metres).

The BMI measures generalised body weight in relation to the height of the individual. The BMI for adults are numerically classified into five categories:

<18.5 is referred to as underweight
18.50-24.9 is regarded as normal weight
25.0-29.9 is graded as overweight
30.0-39.9 is designated as obese, and

Value greater than 40.0 is tagged as morbid obesity.

***b. Waist Hip Ratio (WHR)***

Waist Hip Ratio is another method of assessing the degree of adiposity. It is calculated by measuring the waist in inches at the smallest point above the navel without holding the breath or pulling the stomach and dividing it by the hip measurement in inches at the most prominent point. This WHR measures central obesity (abdominal obesity). The higher the WHR, the higher the risk of non-communicable diseases. In males, when the

WHR is less than 0.95, it is normal and anything greater is an indicator for abnormal obesity. In females, the normal WHR is anything less than 0.81 and anything greater than this is classified as a sign for abdominal obesity.

### *c. Waist over Height Ratio (WSHR)*

The WSHR is another method of detecting excess body weight. It is measured by dividing the waist by the height measurement in the same unit. The WSHR value is the same for both male and female. When the ratio is greater than 0.50, it is an indicator that the individual is over weight or obese.

### *d. Measuring the Waist Circumference (WC)*

The WC is another quick method of assessing overweight or obesity. The normal WC for men has been put at anything less than 40 inches or 102 centimeters. Any figure above this is recognised as being overweight or obese. Women's WC should be less than 35 inches or 88centimeters and any figure above it is an indicator of being overweight or obese.

### *e. Skin-fold Thickness*

This is another vital method of detecting underneath fat folds in an individual. This method is not commonly done because the instrument is not easily available unless in tertiary hospital settings or well-equipped private hospitals.

## Principles of Maintaining Health/Wealth and Slowing Down the Ageing Process

### *(a) Obesity as the Major Cause of Premature Death*

Several studies have linked excessive body weight to the onset of non-communicable chronic diseases (NCCDs) (as listed above). These NCCDs are on the increase due to the high prevalence of obesity in both developed and developing countries. Those individuals with normal BMI, WHR, WC have been identified to have less health risks than those whose parameters are above the normal range. In fact, the WC have been identified as a good indicator for a better health and longevity. Maintaining a healthy weight is a very good way of slowing down the ageing process. Once these life threatening diseases are kept off through healthy dietary habits and regular physical activity, the arteries, veins, body organs and immune body systems will work efficiently thereby slowing down the ageing process.

### *(b) Excess Weight Gain and Insulin Sensitivity*

According to Dr. Atkins, R.C, in his book, *New Diet Revolution,* "Excess weight around your waist is often the first sign that your body is not metabolising sugar properly." The point he is making is that once sugar or carbohydrate metabolism is inefficient, it leads to insulin resistance and hyper-insulinism. Excess levels of insulin in the blood have been linked to type 2 diabetes and obesity. In fact, diets that are high in refined carbohydrates have been associated with heart diseases, type 2 diabetes, high blood pressure and obesity. These refined carbohydrates include sugar, refined white flour, junk snack bars, honey, and potato starch and contain

simple sugars which are absorbed easily through the stomach and quickly converted to glucose.

Consuming these refined foodstuffs in excess requires plenty of insulin for onward transportation in the cells. The excessive production of insulin has been demonstrated to lead to its ineffectiveness in the absorption of glucose into the cells. The liver in turn converts the excess glucose to stored fat. The end result is being overweight, which may lead to obesity, and thus increases insulin resistance. By controlling carbohydrate intake, one can reduce the risk of blood sugar disorders and heart diseases. More importantly, maintaining normal weight definitely leads to good health, which is a precursor for slowing down the ageing process.

### *(c) Caloric Restriction*

Caloric restriction has been shown to increase the production of Brain Derived Neutroplic Factor (BDNF), and reduces atherosclerosis risk factors, total cholesterol, and low density lipoprotein (bad) cholesterol levels. The reduction of all these risk factors delays the onset of degenerative diseases in old age. The risk of most of these degenerative diseases doubles with every eight to nine year increase in age.

The BDNF, is a protein that has been identified to protect the brain from dysfunction and degeneration and supports increased regulation of blood sugar. Research studies have shown that consuming fewer calories can slow down the ageing process and the development of old age-related diseases.

The studies of Molin and Colleagues, Veal and Colleagues did show that the earlier the calorie intake reduction, the greater the effect of slowing down the ageing process. The mechanism is achieved by preventing an enzyme as peroxiredoxin from being inactivated. This enzyme known is also very important in counteracting any damage to the genetic material. Calorie restriction also delays the development of age-related diseases apart from slowing down ageing process. It is the restriction of calorie that reverses the damage done to peroxiredoxin (Prxl) during the ageing process.

The restriction of calorie actually leads to an increased production of another enzyme known as Srxl which in turn repairs the Prxl. Impaired Prxl functions also lead to some types of genetic defects and old age-related diseases (cancer). ''sharply restricting intake of calories while maintaining good nutrition makes animals live longer and stay healthier'', declared Edwin and Collen. This can also be true for human beings, if we all determine to live healthy and consequently slow down the ageing process.

CHAPTER FIFTEEN

# DE-STRESSING TO SLOW DOWN THE AGEING PROCESS

*"Exercise stress is clearly one of the most powerful anti-ageing agents ever discovered."* - ***J. E. Loehr***

It is an axiom that chronic unmanaged stress is one of the major contributing factors to non-communicable disease such as cancer, coronary heart disease, hypertension, Type 2 diabetes mellitus, obesity, arthritis, insomnia and even premature death. More importantly, chronic or intermittent stress also accelerate the ageing process.

There are four major types of mental/emotional stress. The main sources of any of these types of stress can be ascribed to any of the following factors: environmental, physiological, social and our thoughts (emotional). Regardless of the sources of stress, it is basic to life. Its absence in life is impossible because it is the vehicle through which great height and remarkable achievements come through. It is the most vital impetus

or catalyst to achieving personal dreams in the life of every individual. There is no other avenues to achieving greatness in life without the trace of stress. After all, according to Hans Selye, "Complete freedom from stress is death." James E. Loehr, a renown author also wrote; "Protection from stress will not make you tougher, stronger, smarter, healthier, happier or a better performer in any arena". Stress is the stimulus within that pushes you and I to do our best in our different endeavours of life. The central point is to have the knowledge and skill on how to convert this stress into success and understand the various means of controlling this potent vehicle when it is becoming dangerous to your profession, family, health and relationship with others.

The aims of this chapter are to differentiate different types of stress and their signs, sources of stress, advance the reasons for chronic stress being dangerous and suggest practical means of de-stressing to slow down the ageing process.

**Types of Stress**

Generally, stress can be grouped under four main headings; the good stress which is known as eustress, the bad stress which is referred to as distress, the acute (rapid onset) and the chronic (long term) stress.

***The eustress***

The eustress is a positive kind of stress that provides instant strength and joy at the end of the episode. The process of child birth, success after studying for an examination, going for a driving test or a soccer team winning the cup after hard training are typical examples of eustress. This type of stress is for a short period of time

and it enhances the performance of the exhibitor.

**Distress**
This type of bad stress and if not put under control is hazardous to the health. It weakens the body and makes it easily succumb to illness. Distress brings suffering, agony and worry. It is a state of extreme need. When the ship is sinking for example, the crew are in distress and when robbers attack a house, the people in the house may make a distress call to the police for assistance.

**Acute Stress**
This is a very rapid onset type of stress that may be good (eustress) or distress. It is an instant and great force within the body that reacts to the supposed threat, challenge or scare. Frequent occurrence of acute stress may lead to mental health problems, tension, exhaustion, headache and physical difficulty.

**Chronic Stress**
This is the major contributing factor to some of the non-communicable chronic diseases earlier listed. Chronic stress is a long term episode with an ever-present stressor. It appears to be inevitable and inescapable. A good example is an incompatible couple that constantly have disputes relating to domestic matters.

There are other ways stress can be grouped. These classifications include:

***i. Emotional Stress***
This is generated from either poor relationship, sadness, loneliness, loss of sense of humour, anger, guilt or fear.

***ii. Mental Stress***

This is a type of stress that is derived from fear of the unknown, confusion, worry/insomnia, perfectionism or long working hours.

***iii. Physical Stress***

This may be due to high level of exertion, manual labour and lack of sleep. Any of these stressors can lead to rapid heart beat, chest pains and headache.

***iv. Chemical Stress***

This type of stress exist due to the intake of drugs, alcohol, caffeine, nicotine and pollutants from the environment such as carbondioxide from the atmosphere, smoke or pesticides.

***v. Social Stress***

This kind of stress exist due to career and money challenges, other people's opinions, or gossips.

***vi. Traumatic Stress***

The stress can be attributed to illness, surgery, burns, infections or extreme hot or cold weather.

***vii. Nutritional Stress***

This occurs when the metabolism is deterred due to poor eating habits, eating disorder, nutrients deficiencies, food allergies, consumption of fast food or refined foodstuffs, etc.

***viii. Psycho-Spiritual Stress***

This type of stress shows up when a relationship turns sour, career or financial challenges, etc.

### *ix. Body Tissue Inflammation Stress*

This type of stress happens within the tissue when it is injured. Long term of this stress can also contribute to serious illness and ageing. Saturated fats, cholesterol and trans fatty acids, high blood sugar, sweet soda, red meats are pro- inflammatory stress.

### *x. Oxidative Stress*

This is the stress that is related to an over-production of free radicals in the body. These free radicals damage lipids, protein and deoxyribonucleic acid (DNA). The oxidative stress quickens the shortening of the telomeres that play vital role in the health and lifespan of the cells.

### *xi. Psychological Stress*

This type of stress pertains to the state of the mind. It has been ascertained to lead to premature ageing and the earlier onset of diseases of aged.

### Sources of Stress

In general, sources of stress can be derived from five factors. These factors include: physiological, environmental, social, psychological and internal thoughts.

### *i. Physiological Factors*

Some of the causes of physiological stress are those factors that relate to the physical changes in the body system from early adolescent to the young adult, illnesses, poor dietary habits that leads to nutrient deficiency, lack of exercise, accident, alcohol or drug abuse, insomania, headache, stomach upset, high blood pressure, low libido, etc.

### *ii. Environmental Factors*

These are things that are obviously seen, which may be irritating or disturbing. These factors include eratic power supply, loud noise, traffic jam, poor road network, gully erosion, bad weather or uncomfortable housing.

### *iii. Social Factors*

These include such things as loss of a loved one, financial problems, major life changes, being too busy, difficult relationship, chaotic household management, divorce, disagreements, too much demand from work, meeting deadlines, conflicts with family and retirement.

### *iv. Psychological Factors*

These are things that present unhappiness within an individual. These things may include boring job, an inability to socialise, unrealistic objectives, unfriendly workplace, incompatible couple or untruthful relationship, chronic illness or inability to meet financial or family expectation, etc.

### *v. Internal Thought*

These are those things that one perceives to be unacceptable e.g. being maltreated or cheated. These perceptions include negative self-talk, unrealistic expectations, perception of bad events, expecting too much from ourselves or from others, being a perfectionist, having pessimistic attitudes, being extremely self-critical, inability to accept uncertainty or making assumptions.

Perusing the types of stress and their sources, it is apparent that if stress is not converted to good outcome it is certainly going to accelerate ageing process. Understanding the fact that chronic stress is dangerous

will certainly be a good reason to convert stress to success in our daily life.

**Chronic Stress: The major factor accelerating ageing process**

The normal response of the body to chronic stress is to produce greater quantity of two hormones; cortisol and dehydroepiandrosterone (DHEA). These hormones are primarily made from adrenal glands. Ironically, these hormones are antagonistic to each other. DHEA is an anabolic hormone, in other words, it has building influence in the body. Cortisol hormones, on the other hand, has catabolic influence in the body. It has the tearing down property in the body system.

When stress becomes chronic, the body is reported to produce greater amounts of cortisol and less DHEA. The implications of higher cortisol in the body system have detrimental effects that include the following:

i. The immune system is endangered because the cortisol has the attribute to render the immune system ineffective. Consequently, an individual with chronic stress is easily prone to increased infection, allergies and some forms of cancer.

ii. Higher production of cortisol slows down metabolism rate, which in turn may lead to weight gain and abdominal fat. More importantly, higher levels of cortisol may also result to alteration of the blood sugar. The reason is that this hormone has the power to shut down the function of insulin hormone, which functions as the distributor of glucose in the body. Its malformation leads to the accumulation of sugar

(glucose) in the body. The excess of this nutrient in the body is called hyperglycemia which may eventually lead to type 2 diabetes.

iii. Prolonged or chronic stress has also been linked with metabolic syndrome (MX). The greater the chronic stress, the higher the chances of suffering from MX. This MX consists of cardiovascular diseases, diabetes and certain forms of cancer. The characteristics of this MX have been discussed in an earlier chapter on the challenges of the ageing population.

It is apparent from the above points that chronic stress is hazardous to our health. Regardless the source of the stress, be it eustress, acute stress, distress or chronic stress, the most important thing is that attempts should always be made to be in control of it. Specifically, attempt should always be made to de-stress so as to guarantee the slowing down and not accelerate the ageing process.

**Suggested Means of De-stressing to Slowing Down the Ageing Process**

There have been numerous books, magazines and articles written on how to manage stress whether acute or chronic. Practicing yoga, improved breathing, laughing technique, relaxation methods and different aerobic exercises have all been advanced as means of minimising the adverse effects of chronic stress. Some of the techniques for reducing the effect of stress are described in the *Ultimate Plan for Healthy Living* by Ojofeitimi E.O. It should be noted that some of the techniques advanced by different authors may not have the same effects or results. Thus, a combination of some of these techniques may offer remarkable results.

Some of the techniques or suggestions that may have permanent positive results as to slowing down the ageing process include the following:

i. Maintaining good nutrition because it supports good adrenal glands, which is of great importance in fighting against stress. Chronic stress shrinks adrenal glands. Diet should include whole grains with high fiber from beans and oil seeds (soybean, groundnuts) fruits, green leafy vegetables, fruits, moderate amount of lean meat, low fat dairy products, fish, nuts, seeds and oils that are rich in unsaturated fats. Remember that under chronic stress, essential nutrients that help fight against it are depleted rapidly. In fact, it reduces helpful neurotransmitters (serotonin and dopamine). Good nutrition begins with having breakfast because skipping breakfast leads to poor stable blood sugar levels. This may lead to being ineffective non-functioning in the morning.

ii. Maintaining a healthy weight. This point has been discussed as one of the avenues of slowing down the ageing process.

iii. Breathing exercise, meditation, laughter, aerobic exercises are different techniques to calm the nerves and return them to normalcy. *Ultimate Health Plan for Healthy Living* by Ojofeitimi should be a good source for learning any of the above techniques.

iv. Begin to exercise stress. Exercising stress, according to Jim Loehr, has been shown to be one of the most powerful anti ageing agents ever discovered. He believes that "some forms and types of exercise are far

superior to others in terms of toughening".

This toughness training exercise can be achieved by exposing the body to abdominal stress by doing at least 100 sit-ups on daily a basis

***Practicing heart-and-lung stress***

This is based on combination of aerobic and anaerobic exposures. This combination is achieved by picking any of the aerobic exercise. For example, being a runner, you will run fast then walk slow. The idea of walking slowly after running fast is to facilitate maximum recovery. The exercise can also be done for biking, cycling, swimming, jogging or any other sport of your choice. This exercise is recommended for 20 to 30 minutes and it should be for a minimum of 3 to 4 interval sessions per week.

***Increasing general muscle strength***

This exercise is to increase physical capacity of the muscles which in turn will lead to mental and emotional stability. The use of machines, free weights, flexible rubber tubing or the body resistance (push-ups, wall pushing) are examples of muscles strengthening.

***Maintaining Muscle Flexibility***

It is asserted that the older one becomes the more inflexible he or she becomes physically, mentally and emotionally. Maintaining muscle flexibility, according to Jim Loehr, helps to protect against these three signs of ageing. Various methods of muscles flexibility have been described in many health books including, Don Colberts' *The Seven Pillars of Health*, *and The Ultimate Plan for Healthy Living* by Ojofeitimi, E. O.; *Weight Control for Healthy Living* by Ojofeitimi and Fawole; *The Total Well Being Diet* by Noakes and Clifton, *Understanding Stress*

by Wilkinson, G.; *8 Minutes in the Morning for Extra-Easy Weight Loss* by Cruise J.; *Stress for Success* by Loehr, J. E. and McCormack M, and so on.

Practicing all the methods suggested here religiously will certainly assist to slow down the ageing process.

In conclusion, let us quote the words of wisdom of James E. Loehr, that says, "No matter what age you are, it's possible to continue to improve your strength and muscles and to significantly slow the aging process."

The familiar maxim, "the older you are, the less you should do," can have tragic consequences. More appropriate advice is: "the older you get the more important to use it or lose it."

**Slowing down the Ageing Process through Sexual Activities in later years**

*"Couples who make love three times a week look between four and seven years younger than those who have less sex."* ***-Dr. David Weeks***

While it is an opinion of a majority of people form different cultural backgrounds that discussing anything concerning sexual activity should not be an open issue, several studies have shown that regular sexual intercourse slows down the ageing process. Dr. David Weeks, a clinical neurologist at the Royal Edinburgh Hospital conducted a cohort study of 3 500 volunteered couples aged between 18 and 102 years on the frequency of sexual activities on a weekly basis. The conclusion of the study was that those couples who made love three times a week looked between four and seven years younger than those who had less sex. The question that arises: what are the benefits of sex to the body system? It

should be noted, however, that as people age, their sexual desire decreases. Women are reported to be 2 to 3 times more likely than men to have sex drive decline. This is due to lower hormones and cultural issues.

**Benefits of sexual Intercourse to the body system**

The maximum benefits of sexual intercourse are derived from legitimate couples or partners. Promiscuity does not guarantee any benefits. First and foremost, one of the greatest benefits of sex is that it is one of the best avenues to facilitating feelings of closeness to the partner. Other important benefits include:

I. **Sex has been shown to be an excellent aerobic exercise.** An active sex activity raises the heart beats and circulates oxygen to the entire body thereby improving the immune system.

ii. **High level activities during sex by both partners could actually lead to weight loss.** Vigorous sex that makes the two partners sweat actually helps to burn stored body energy and also tone the body. It has been estimated that active love making for thirty minutes burns about 150 calories.

iii. **Sex as a Pain Killer.** Research studies have shown that love making that reach orgasm can assist to alleviate joint, muscle and menstrual pain, relieve headache and discomfort from arthritis. Studies from Queens University in Belfast did show that endorphin (referred to as oxytocin) that is released in the body before orgasm are five times higher than normal. This

oxytocin hormone which is produced by the pituitary gland has also been linked to assist in moderating mood swings in women.

iv. **The Production of Insulin-like Growth Factors (IGF).** It has been advanced that sexual intercourse raises the level of (IGF) hormone. This hormone controls the activity of enzymes within the cells that are responsible for fat metabolism. When the level of IGF is released, it aids in breaking down fatty tissues and providing lean muscle instead.

v. **Improvement of Immune System Levels of T3 and T4**. Lymphocyte white blood cells that produce anti-bodies are increased when orgasm is attained during sexual activity. These white blood cells fight infection. The inference is that healthy sexual activity strengthens immunity to infection.

vi. **Sexual intercourse reduces stress.** A successful sexual intercourse relieves the body of stress. This is primarily due to the release of endorphin as a result of orgasm. The endorphin are released in the brain and trigger the feelings of calmness and satisfaction throughout the entire body. Consequently, healthy active sex promotes better sleep.

vii. **Production of Dehydroepiandrosterone (DHEA)** During sexual activity the body secrets an hormone referred to as the "mother of hormone or master hormone" called DHEA because it is a precursor for several hormones. It is produced by

the adrenal gland of both men and women and is easily converted to other hormones such as testosterone, estrogen and melatonin. The DHEA has been reported to be involved with weight loss and strengthening of the muscle. The production of this hormone, however, declines with age. Regular sex has been proposed to be one of the avenues to prevent the decline.

viii. **Sexual Activity as a Means of Detoxification.** A participative intensive sexual activities that make the two partners sweating is another avenue of eliminating toxins from the body through the skin.

It is apparent from the aforementioned points that a healthy active sex life does not only promote long life, but it also assist in looking younger and ageing better.

ix. **Sexual Activity as Means Active Rest.** According to James E. Loehr and his colleagues, sex has been grouped together with Yoga, Tai-chi, stretching, fishing, walking, biking, jogging, golf swimming and gardening because all of them involve movement of the physical body. Regular practice of any of the these activities will definitely lead to weight loss, and the production of DHEA. More importantly, any of them improves the immune system of the body.

To derive full benefit from your sex life you must subscribe to regular exercise and minimize your consumption of sugary foods. Above all, you

should cut down your alcohol intake. It lowers the production of male sex hormone, called testosterone and delays orgasm in women. More importantly, it leads to obesity, high blood pressure and clogged arteries because these three factors inhibit potency.

CHAPTER SIXTEEN

# FUNDING AND POLICY ISSUES IN ELDERLY CARE

*"I am certain no one sets out to be cruel, but our treatment of the ill elderly seems to have no philosophy to it . As a society, we should establish whether we have a policy of life at any cost."* - ***Tery Pratchett***

Normal aging refers to the complex of diseases, disability and impairments that characterise aging. The success of normal ageing refers to a process by which deleterious effects and impairments are minimised, and preserving functions. When people age, there is a decline in physical activities. This presupposes the fact that these elderly persons would not be able (at most times) to support themselves financially, and physically and so they would need support especially financial support. Apart from funds, a good policy environment would guarantee better life for funding, legal right and care of the elderly in general. With institutionalised care becoming more expensive, options available for funding the care and welfare of the elderly is a matter of great concern.

**Rationale for Adequate Funding and Policies**

Associated with elderly care are retirement and pension issues, moral and physical support to be given by the immediate members of their families. For those who had retired from one job or the other and where pension plans are in operation; such may relieve their relatives of absolutely having to depend on them. Enjoying old age for retirees therefore, means planning so as to enjoy old age. For those in the working class planning for their old age, it is essentially important in the area of living so as to make old age an easy event.

In addition, the elderly are vulnerable and prone to numerous ethical and legal issues affecting their care and their health. When dilemma exists, caregivers may have to resort to the national guideline on elderly care to ensure optimal practice in caring for the elderly.

**Sources of Funding for Elderly Care**

Funding elderly care would require looking into many of the options available

i. Planning for pension scheme in essence will help to lessen the suffering of the retired old people because pension is a form of social security against old age. Pension is a transfer of programme that serves as a channel for redistributing income to the elderly or retiree after a number of stipulated service years. Government or private companies or organisations against old age risks, should regularly pay pension. In many countries, those who have disengaged from public service cannot get their pensions as at when due and some have died on queues, waiting for their

pension and gratuity because there are no adequate measures to address the problems of senior citizens," he lamented.

ii. Saving for old age has never been part of the culture of the rural communities where most of Nigerian elderly people reside. The social security of these old ones is their children as they had also been to their parents.

iii. Funding by the communities, philanthropists, private organisations, etc.

iv. Formal funding by the government, NGOs, FBOs.

**Policy Issues in Elderly Care**

Nigeria was signatory to the 2002 Madrid International Plan of Action on Ageing, which established a global long-term strategy for the care of the aging population. This Madrid plan calls for a multi disciplinary approach in efforts to take care of the elderly and promote their well being. It is important for member countries at the conference to ensure strict adherence to the provisions of these agreements, all to the social and medical benefit of the elderly population.

Nigeria presently does not have a national policy on elderly care. This would have been the guideline and template upon which elderly care and issues will be based. This would provide the desired framework for standards in elderly care, standard operating procedures and a national plan of action targeted at the elderly. Such guidelines would spell out the roles of the different stakeholders, quality on institutionalised care as well as guide NGOs and FBOs working in the realm of the care of the elderly.

Human right elderly bill is a policy that countries need to enact in order to protect the human right of the elderly. As the elderly are vulnerable to abuse and social concerns, it is important that their interests are protected. This will also serve as a template for lawyers to defend abused and vulnerable elderly and bring offense perpetrators to justice. Such right bill will also take care of issues of the elderly being confined to institutions against their will.

**Policy on Elderly Reforms**

A very good example of this is the pension reforms. In many countries, a retired civil servant goes through a lot of stress to get his/her entitlements in form of gratuity and pension. A contributory pension scheme recently commenced in Nigeria to reform the pension system. Civil servants were also encouraged to save for the future through adoption of any of the legacy funding plans. But the situation is worsened by the non-inclusion of the elderly in the health insurance scheme, a trend that many countries are trying to adopt so as to ensure that elderly persons are cared for under the statutory health insurance scheme, better still a community based health insurance scheme.

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