

## **EXERCISE AS A NECESSITY FOR HEALTHY AGEING, GRACEFUL DYING TO DEATH IN NIGERIA**

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### **Abstract**

*Ageing, dying and death are inevitable in human life. Ageing and the aged have been seen and treated by many societies as a burden, even in Africa including Nigeria. However, healthy ageing, graceful dying to death can be achieved through an individual's involvement in planned routine exercise. This paper explains the meaning of exercise, exercise as a healthy lifestyle factor, ageing, healthy ageing, dying and death. It shows the benefits of exercise and its role in healthy ageing, graceful dying to death. It also prescribes some exercises for the ageing population in Nigeria. This will enable them to take active part in the society, enjoy high quality of life as well as experience healthy ageing, graceful dying to death.*

**Key Words:** Ageing, Death, Dying, Exercise, Healthy Ageing

### **Introduction**

Human life from birth to death changes as the individual grows and develops from childhood, adolescence, adulthood to old age. Research has shown that many of the changes attributed to ageing are actually caused in large part by disuse (Harvard Health Men's Watch, 2005). Lack of exercise accompanied with sedentary lifestyle may increase the rate of ageing. This might be the reason why the developed countries devote reasonable time and resources to exercise. However, participation in exercise results to healthy ageing, graceful dying to death.

Exercise may be described as a regular or repeated use of any part of the body for skill development, physical fitness or improvement in performance. Exercise is defined by Kent (2006) as any set of movements designed to train or improve a skill (for fitness or competition). Merriam-Webster Dictionary (2012) defined it as a regular or repeated use of a faculty or bodily organ; or bodily exertion for the sake of developing and maintaining physical fitness.

Exercise has been identified by research to be a worthwhile lifestyle activity for healthy ageing, graceful dying to death (Euro health net, 2013). Ageing gracefully is not always an easy task, but one's attitude matters a lot. In other words, a Nigerian's attitude to exercise which is difficult to cultivate will to a large extent determine his ageing, dying gracefully to death or not. In this paper, exercise is defined as a regular or repeated use of the body for exertion of energy, skill development, physical fitness, improvement in performance or to assist the ageing process for graceful dying to death.

Ageing means growing old (Park, 2009). It is an indication of changes and deterioration in the vitality of the body or the lowering of the biological efficiency. It may also be seen as a natural process with associated diseases which may be seen as incurable diseases. Since man can not cure old age, the only thing to do is to expose the ageing to exercises which will help to protect, promote and extend ageing up to the point of dying or death.

Dying may be seen as a stage of life in which a person is incapacitated with threatening disease(s) that may last till death. It may be a gradual passing out of life or existence. Kastenbaum (1995) stated that dying is a life process that begins when the fact is clear and a physician after necessary investigations informs a person that there is a life threatening illness. The person realizes and accepts the fact, as nothing more can be done to preserve his life. The physician may not certify him as dying but waits until all treatment possible has been exhausted. At this stage, the person moves gradually from life to death. A person at this stage in life could still be engaging in exercise to enable him die gracefully

to death. In this paper, dying is a stage of life in which a person is not completely incapacitated with threatening disease(s) and requires exercise to assist and keep him till death.

Death has numerous definitions. This is because it has many physical, psychological, social, legal and spiritual aspects, leading to defining death from different perspectives. These perspectives will be discussed below. Simply put, death is the condition of not being alive. It is also a condition of permanent ceasing of the functions and activities of life in which participation in exercise would not be necessary or possible. However, when one engages in exercises, it could assist him to pass on gracefully to death. In this paper, death is a condition in life that is not being alive which does not requires exercise for improved functions and activities of the body.

### **Exercise as a Healthy Lifestyle Factor**

Exercise is one of the healthy lifestyle factors which if carefully practiced can influence individual risk of developing many of the diseases of later life. The other lifestyle factors according to Park (2009) are diet and nutrition, weight and social activities. According to Park, exercise helps an individual even the ageing to maintain good health. Exercise helps an individual to achieve this by controlling his weight, improving his emotional well-being and relieving up stress, improving blood circulation, increasing flexibility, lowers blood pressure, increase energy levels, improving balance thereby reducing the danger of falls among the ageing, lower blood sugar level thereby helping the diabetics, and improves bone density thereby helping to prevent osteoporosis (Martinsen, 1990; Dunn, Trivedi, and O'Neil 2000; Lawal and Abdullahi, 2008; Park, 2009; Aniodo, 2011; Phys.org, 2012).

Obesity and overweight contributes to many of the diseases of later life and has become major problem worldwide but can be controlled through participation in planned routine exercises. Park (2009) also identify obesity as an important factor in heart disease, stroke, diabetes, hypertension, arthritis (especially in the knees), and breast cancer.

Old people need regular exercises, healthy diets, fulfilling social relations, participation in meaningful activities and financial security (Euro health net, 2013). When old people take part in exercises together with others, they create a sense of belonging and prevent social isolation. Even by mixing with other people of similar age, at similar stage of life probably with similar health concerns, assists individuals with similar conditions that they are not alone. One can recover from illness through the support gained from people who exercise together. Euro health.net also revealed that various ailments reported by the elderly such as locomotive disorder, joint and muscle, neurological complaints, cardiovascular diseases, respiratory disorder, gastro-intestinal/ abdominal disorder and mild psychiatric problems can be managed through a healthy lifestyle made up of well planned exercises during youth and adult years.

Research findings by Professor Dafna Benayahu and her team at Tel Aviv University Sackler School of Medicine revealed for the first time that exercise unlocks the stem cells of our muscles (Phys.org, 2012). The researchers reported that old people who have exercised throughout their lives age more gracefully. According to the team, endurance exercise increases the number of muscle stem cells and enhances their ability to rejuvenate old muscles. When people age, they experience sarcopenia, a decline in mass and function of muscles, and osteopenia which refers to bone loss (Phys.org, 2012). The musculoskeletal system is more susceptible to daily wear and tear. This explains the increased risk of falling in the elderly but can be managed through exercise.

Ageing is associated with a reduced level of spontaneous locomotion (the feeling in a human to get up and perform an action or activity). When ageing is combined with sedentary life style they contribute significantly to the development of diseases such as obesity, diabetes, osteoporosis, cardiovascular diseases and decline in cognitive abilities (Phys.org, 2012).

### **The Concepts of Ageing and the Aged**

Ageing means growing old, (Park, 2009); indicating changes and deterioration in the vitality or the lowering of the biological efficiency that accompany ageing. The changes and deterioration lead to death.

The question about when old age starts and when one is old depends on countries. For developing countries, Dhaar and Robbani (2008) stated that sixty (60) years is viewed as old. In developed countries, sixty five (65) years and above is seen as elderly and seventy five(75) years as very elderly. For the United Nations, sixty(60) years is viewed as a transition age into elderly age group.

The old, the very old, elderly and the very elderly are considered in this paper as the aged, they will be used interchangeably to mean the same thing. Ageing is a physiological process that starts from birth, continues throughout life and ends with death (Dhaar and Robbani, 2008). According to them, to assess the process of ageing of an individual, one compares the biological age with chronological age. Ageing is a normal process of life. When biological age lags behind chronological age, ageing is described as delayed or retarded. However, if the biological age advances ahead of the chronological age, ageing is described as precocious or premature.

Even though everything about the ageing process have not been known, however, literature evidence point to the fact that the following are some of the disabilities considered as incident to ageing. They are: - senile, cataract, glaucoma, nerve deafness, osteoporosis affecting mobility, emphysema, failure of special sense and change in mental outlook (Park, 2009). Chronic diseases are more frequently among older people than other groups. According to Park, old people suffer degeneration diseases of heart and blood vessels, cancer, accidents, diabetes, diseases of locomotor system both articular and non-articular disorders such as fibrositis, myositis, neuritis, gout, rheumatoid, arthritis, osteoarthritis, spondylitis of spine etc. causing a lot of discomfort and disability among the ageing population. This group according to him also suffers from respiratory illness such as chronic bronchitis, asthma, emphysema etc as well as in their genitourinary system such as enlargement of the prostate, dysuria, nocturia, frequent and urgency of micturition among others. The ageing group equally suffers some psychological problems of mental changes such as impaired memory, rigidity of outlook, and dislike of change. They experience sexual adjustment of cessation of reproduction by women and diminution of sexual activity on the part of men at 40/50years of age. As a result of this, they may suffer as a result of physical and mental or emotional disturbances as well as frequent irritability, jealousy and dependency.

Dhear and Robbani (2008) reported that it has been estimated that about 530million people aged sixty (60) years and above live in the world, out of which 355million (61.20%) live in the developing countries. By the year 2020 the world population of old people is expected to reach 1000million of which more than 700million (70.00%) are expected to be living in developing countries. As the death rate declines in most part of the world, life expectancy increases, and the number and ages of older people increase (Wallace and Kohatsu, 2008). According to Wallace and Kohatsu, a shift in the age of a population has implications for the health problems a society must face and the health services that must be provided.

The steady growth in elderly population in the world, Africa and Nigeria is expected or destined to increase the burden of diseases and care related, associated and given to old people with other consequences. There is therefore the need to assist this group through exercise to cope and overcome the burden associated with ageing. In this paper, ageing is growing old, a period of life which moves from one level to another, also requiring exercise to graciously pass from old age to death.

### **Theory of Ageing**

The theories of ageing fall into four categories. Aiken, (1994) categorized them into; breakdown theories, substance theories, hormonal theories and ageing clock. According to Aiken, the breakdown theories indicate that ageing is the result of wear and tear, stress or exhaustion of the body organs and cells. When this happens, there is deterioration of the system (such as the immune system) so that the body can no longer protect itself adequately against diseases and this may result to ageing.

In the substance theory, Aiken stated that at the tissue level, there is a change in the collagen and the proliferation of mutant cells. The strands of connective tissue protein (collagen) change with age, resulting in less elasticity or resilience in visceral organs, slower healing and other body changes. Again, as people become older, waste substances or products of the body metabolism may start interfering with normal functioning of the cells leading to deterioration and ageing. For the hormonal theories, Aiken, (1994) also reported that human ageing is caused by the hypothalamus. The hormones produced by it interrupt the absorption of thyroxin, which is important for cell metabolism and functioning leading to changes as deterioration and ageing.

On ageing clock theory, Aiken (1994) reported that there is an ageing clock which is a prewired, genetically determined ageing programme somewhere in the body. The ageing clock determines the ageing and death of people. This brings a limit to the number of times a body cell subdivides before dying.

The implication of these theories to this paper is that studies have indicated that exercise assists in the wear and tears of the body cells as well as enhances the division of the body cells as well as assists in the replacement of the broken down cells. This could take reasonable care of the breakdown problems of the body during ageing thereby delaying ageing fast.

### **Healthy Ageing**

In the medical field, when one has freedom from chronic diseases and the ability to continue to function effectively, both physically and mentally in old age, this may be regarded as successful ageing. According to Kennedy (2000), this may also include maintenance of physical and mental function and continued involvement in social activities and relationships. Hansen (2005) defined healthy ageing as a process of slowing down, physically and cognitively, while resiliently adapting and compensating in order to optimally function and participate in all areas of one's life (physical, cognitive, social and spiritual life). The attributes of healthy ageing according to Hansen include ability to function physically, cognitively, and socially, continued modification, self assessment and redefinition of self and abilities; desire to continue to actively participate in life processes, continuous process of change and adaptation, acceptance and movement towards death.

What an old person needs for healthy ageing according to Hansen (2005) are adaptation; the ability to redefine one's self in terms of independence and autonomy. Compensation; the ability to change one's life style to accommodate the physical changes that have occurred as well as resilience which means the ability to bounce back, to change, and to adapt. When the ageing population is able to adapt to prescribed exercises as well as to other healthy lifestyle activities and change the unacceptable lifestyle of inactivity to an active life with due consideration of the physical changes, they will attain graceful and successful ageing leading to healthy ageing.

Hansen also revealed that the consequences of healthy ageing is successful ageing which is the ability to establish and maintain stated goals or lifestyle and involvement in prescribed roles which may include participation in exercises; independence which is the ability to live on one's own care. Pascucci (2008) therefore recommended that for successful ageing to occur, there is need for old persons to be proactively engaged in certain health behavior such as engaging in exercises in mid-life that will increase the likelihood of reaching and maintaining the goal of successful ageing in later life. They will consequently prevent disease-related problems; prevent cognitive impairment and prevent later-life depression and relapses. Science and research measure health using the parameter of nutrition status and risk, exercise or physical activity function or care, mental or cognitive function, social support systems and total quality of life (or life satisfaction) which drive towards healthy ageing, graceful dying to death. In this paper, healthy ageing is a process in which the body slows down, both physically and mentally or otherwise, and still adapts and compensates in order to optimally function and participate in all areas of one's life including exercise.

### **The Concept of Dying**

Dying is an incapacitated process of life with threatening disease(s) that terminates in death. According to Kastenbaum (1995), dying begins when the fact is clear and the physician makes a judgment and obtains and analyses enough critical information that there is life threatening illness. Again, when the physician informs the patient about the illness and the patient realizes and accepts the facts, dying begins. At this point, nothing more can be done to preserve life. The physician may not certify him as dying but appreciates the seriousness of his condition and waits until all treatment possible have been exhausted.

Elizabeth Kubler-Ross, in her book "Death and Dying", published in 1969, introduced the five stages of dying as denial, anger, bargaining, depression, and acceptance (Ene, 2009). Denial is the first stage, a state of shock in response to the bad news in which he may gradually recover. Anger follows after the denial stage as the patient becomes more difficult to relate with as he is fury and frustrated. At the stage of bargaining, the patient attempts to make some kind of deal with fate for an extension of life. Depression sets in when the patient experiences increased weakness, discomfort and physical deterioration. The patient at this point becomes afraid of dying as he experiences stress, strain, feeling of guilt and unworthiness. Lastly, he accepts his case but not a happy and blissful state, and struggles no more.

Exercise is necessary for a dying person. This is because exercise can assist the person to be able to sustain the shock from the bad news. Exercise helps one to recover faster from shock. When a dying person participates in any exercise within his ability, he lets up steam from anger and recovers better and easier to relate with. As he bargains with fate to extend life, exercise keeps him more active than usual and alive even in that state of hopelessness. Research results indicate that exercise can be used to manage depression (Martinsen, 1990). This may include depression associated with dying. At the acceptance stage, a dying person may be taking part in any exercise of choice to occupy himself until he gracefully passes on to death.

### **The meaning of Death**

Death may be simply described as the stoppage or end of life. It is a natural event that happens to all living things. It is a concept that has different definitions. Bernat, Culver, and Gert (1981) looked at the organismic definition of death as the irreversible loss of functioning of the organism as a whole. Okafor (1993) defined death as an unpredictable and unexpected event that cuts off life. According to Santrock (2000) death means the shedding off of the biological and physical body and transition into the spiritual realm. Different individuals and professions defined it to suit what they believe and profess. Death is therefore difficult to define. This is because death and dying possess physical, psychological, social, legal and spiritual dimensions leading to defining death from several perspectives (Ene, 2009). In physical death, Ene revealed that it could be either clinical or biological. Clinical death is when death occurs and a death certificate is given by a physician indicating that there is a non-reversible cessation of life processes.

For psychological death, he described it as a state of being unaware of self or the world around, and if properly handled can be reversible. However, total psychological death most often occurs at the time of physical death. In social death, Ene also indicated that when other people perceive an individual as dead or non-existent, he or she is socially dead. Social death, according to Kastenbaum (1986) may also occur before the end of biological life, when the person experiences limited contact, muted voices and averted eyes.

A person may be considered medically and legally dead (Ene, 2009), “ if in the opinion of a physician, based on ordinary standard of medical practice, there is the absence of spontaneous brain function, and if based on ordinary standards of medical practice, during reasonable attempts to either maintain or restore spontaneous circulation or respiratory function in the absence of afore-said brain function, it appears that further attempts at resuscitation or supportive maintenance will not succeed, death will have occurred at the time when these conditions first coincide” pp5.

In spiritual death, Ene also reported that death is a transition, a splitting of spirit from the body or some otherwise altered state of being. This relates to the believe that death implies something that continues or begins when the last breath is released and the spirit continues with spiritual life into eternity. There are strong indicators to show that a person is dead. According to Wijdick (2002) these indicators include the following:

- pallor mortis meaning the paleness that happens instantaneously between 15 to 120 minutes after death;
- algor mortis which means the reduction in body temperature after death;
- rigor motis in which the limbs of the corpse become stiff and difficult to move;
- livor mortis which means the settling of blood or fluid in the lower portion of the body; and
- decomposition meaning the reduction of the body into smaller forms of matter.

In this study, death is defined as the end of life, an irreversible breakdown of respiration and the body's inability to use oxygen which may not be managed by exercise. Exercise is of no much value to the dead. It is therefore necessary to embrace it when one is able to benefit and adapt to the effect of exercise.

### **Benefits of exercise**

Studies have indicated some benefits of exercise. Martinsen (1990), Dunn, Trivedi, & O'Neil (2000), Lawal & Abdullahi (2008), Park (2009) and Aniodo (2011) indicated that exercise is beneficial to the human body in the following ways:

- Body organs become more active to meet the needs of the whole part of the body
- The heart pumps blood well at greater volume to all parts of the body
- The lungs take in a great volume of oxygen and sends out carbon dioxide as well as other waste from the mouth and nose
- The digestive system supplies the needed nutrients to other part of the body as food digestion is enhanced
- Exercise tones up the muscles and strengthens the bones
- It makes the joints more flexible
- It prevents postural defects
- Participation in regular exercise improves emotional, social, mental and moral conditions of the body
- Exercise assists the body in absorption and excretion of waste products as well as facilitates rapid response against invading pathogens
- Group exercise helps to develop social life and capability to adjust to environmental conditions as well as develop good social habits and attitude.
- Exercising the body results to physical fitness that enables an individual meet with the stress and strain of modern life and still have energy for recreation and emergencies
- Participation in regular exercise helps an individual to resist diseases and prevent regular illness with resultant economic benefits.
- Exercise develops mental readiness and alertness, and intelligence increases with the degree of fitness from exercise
- Physical exercises help to open up closed pores in the body
- Exercise stimulates adequate circulation of blood in the body
- It enhances the functioning of the various organs and systems in the body (such as the heart, lungs, nervous system, muscle system, digestive system, etc)

### **Exercises for Healthy and Graceful Ageing**

The human body metabolism slows down as one gets old, however, people want to age gracefully and at optimal well-being irrespective of this change. This can only be achieved through adopting a healthy lifestyle which includes taking part in exercise. The following exercises are hereby prescribed for the ageing in Nigeria:

1. Aerobic exercises are required for healthy and graceful ageing. Examples of such exercises are:

- Walking
- Cycling or Bike riding
- Jogging
- Swimming and
- Tennis among other aerobic activities for the elderly.

They should be part of the old people's activities in Africa (including Nigeria) in order to remain active through daily life.

2. Older people are associated with falls and as many as 28% to 45% fall every year (Eldergym, 2012). This is because individual balance decline with age. According to Eldergym, old people fall because of the following reasons: decreased vision, weak hip and legs, poor posture, inability to lift ones leg, long reaction time, drug interaction, and low blood pressure among others. In order to improve their balance, they need to engage in the following:

- balancing activities
- elderly balance exercises and
- elderly balance training

3. The ageing population in Nigeria needs also to engage in training to improve their movement through the co-operation between the brain, nervous system, muscles and bones. The exercises should concentrate on the above systems to maintain elderly balance. The exercises are:

- Strength training
- Endurance training and
- Balance training exercises

4. The ageing can engage in seating and standing exercises using a chair. This should be done slowly.

5. Light movement dancing exercises even at home is good for the ageing.

6. The ageing can engage in lifting light weights repeatedly with the arms or legs to develop strength of the limbs or exercising with machines.

7. Standing balance exercise like the one leg stance is good for the ageing. This may be done with one leg after the other supporting himself.

8. The ageing can take a chest lift and shoulder down exercise breathing in and out during the exercise.

9. Warm-up and cool down exercises can be used by ageing persons to prepare and relax the body before and after elderly stretching exercises.

10. The ageing needs some resistance exercises, strength exercises, stepping exercises, flexibility exercises and heel toe exercises.

### **Some guides for Healthy and Graceful Ageing**

The following guides can assist the ageing in Nigeria in their exercise:

1. The ageing should take part in exercises for 30 minutes a day (10minutes in the morning, 10minutes after lunch and 10minutes at night) to ensure maximum outcome.
2. Daily exercises should not exceed between 10 to 20minutes at a stretch unless it is otherwise permitted by a fitness expert.
3. Warm-up for the ageing should last for 10minutes before the daily routine exercise.
4. Regular check-up with a Medical Doctor is required if the ageing is identified with any disease of the elderly.
5. It is advisable for the ageing to use a supporter when taking part in exercises preferably a close relation.
6. The ageing should always attempt to walk straight avoiding bending down but keeping the weight over the ankle.
7. When one is younger, stronger and able is usually better to adjust to activities involving thinking and feeling regarding taking part in daily routine exercises.

### **Conclusion**

Time and change work hand in hand and as the clock ticks for all human beings, change also occurs. However, when people handle major problems and challenges of life appropriately, the change comes slowly and gradually, even though they will eventually add up, leading to ageing. At this point, it is better not to give up with healthy lifestyle habits and attitudes that one developed at youth, which should include regular exercise.

Even though exercise is a worthwhile activity for healthy aging and dying gracefully to death, it could be wasteful or harmful if it is not properly done. It can destroy the organs and systems in the body if the principles of training for each exercise are violated. This calls for an expert's attention during elderly exercise.

It is pertinent at this point to examine graceful dying to death, and how the following two old persons died. The first is old and dying but suffering from old people's disease. He does not take part in any exercise. His family took him to many hospitals, from the clinics to the specialists even overseas for treatment, wasting the family's resources. At last, he was wheeled into a chair and moved about. His family took care of him, bathing, dressing and feeding him etc and at the end he died.

The second person is also an old man, dying and equally suffering from old people's disease but takes part in regular exercise, a habit he cultivated in youth days. He copes with little or no medication. One day, after his routine exercise, he took his bath and meal, charted with his family

members and went in to have a rest but never woke up and died. The two case scenarios explain the crux of this paper.

### Recommendations

It is therefore recommended that:

1. In order to achieve maximum benefits from exercises of the ageing population, individuals should consult experts in physical education, exercise and fitness training. There must be proper selection of exercises for the ageing, and well conducted in terms of frequency, duration and intensity of workouts.
2. The factors that contribute to ageing and the burden of illness or diseases are potentially responsive to preventive interventions. Health education of the young and the ageing about the benefits of exercise is therefore important in order to change their views, behavior and habit for healthy ageing.
3. In Nigeria, certain social welfare measures should be provided for the old and the elderly (ageing). This is because in the western world, certain social welfare measures are provided such as national assistance, supplementary pensions, home services, homecare services, meals on wheels services, old folk's homes, sitters-up services and provision of services of health visitors and exercise programme. When these services are provided, the nation ensures that the past services of the old and elderly are not neglected, and that the years of retirement of those who have worked hard in the services of the county are free from anxiety, want and boredom which may also lead to suicide and bad death.
4. Nigerian governments, non-governmental organizations and institutions should develop and fund exercise and recreational programmes for the ageing population. This will help them to be active and still make meaningful contributions to the development of the country rather than being a burden to themselves, and the society.

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