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The Role of Physiologists in Health Care Delivery Through Exercise

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INTRODUCTION

As a Physiologist, I will start this Lecture with this sensitive puzzle: What Gives Some People More Vitality, Vivacity and Liveliness Than Others? Here is the Answer: Some people have supply of energy that seems inexhaustible; they accomplish more in a day than others in a month; stay younger and longer than others; source of their tirelessness may be inherited; their exceptional energy may be inherited; always bursting with good health and a zest for life; other people are always tired, probably due to chronic lethargy from mild thyroid deficiency to arthritis, diabetes, or cancer; fatigue, poor eating habits, worries, and too little activity.

Here, the exercise physiologist comes to the rescue. An Exercise Physiologist has a lot to educate, direct, propel and supervise various types of exercise of various individuals in order to help them secure adequate health care at every stage of their lives. And who is the exercise physiologist? I personally define physiology as the study of the *normal* functions of the body, both in *health* and in *exercise*. Note the words Normal, Health and Exercise. The person that specializes in physiology is a physiologist while that physiologist whose special area of interest in physiology is, on exercise, is the exercise physiologist. Exercise Physiologists, as healthcare professionals, are self-regulated critical thinkers who are accountable and responsible for their practice and delivery of exercise physiology concepts, ideas and services. With adherence to the code of professional conduct, such as the American Society of Exercise Physiologists (ASEP), their businesses in healthcare delivery are guaranteed. They accurately communicate and provide health and fitness, educational, preventive, rehabilitative, and/or research services equitably to all individuals regardless of social or economic status, age, gender, race, ethnicity, national origin, religion, disability, diverse values, attitudes, or opinions. Here, the exercise physiologist has a lot to carry out in educating and imparting the benefits of exercise in healthcare delivery, on individuals or group of individuals, as the case may be.

Exercise is a physical or mental activity for one to stay healthy, keep fit, improve one's condition, endurance or become stronger. You cannot do without certain level of an exercise. Professor (Sir) A.C. Ugwu (2007) insists that: ***"If You Do Not Perspire, Then You Will Expire". "The Choice Is Yours".*** He demands that **during long hours (2 to 3 hours) of sitting down,** eg., during prolonged meetings, studying periods, etc. you should **obey *the "3Ss Exercise Pattern of: 'Stand Up; Stretch Out; Sit Down''. This is*** *to be* ***repeated at least three times*****, before continuing** with the meeting or the studies. This process **tremendously rejuvenates** the body systems. Nature's conditions of life no longer give people enough physical activity. Work, travel, leisure times are mostly sedentary involving sitting and watching something. A ratio of 75:1 hour durations are spent on watching films, TV, sports, browsing, etc., compared to physical participation (Ugwu 1991, 2007). In the 1970s, only a very few people recognized the health benefits of regular physical activity and exercise (Brehim,1993). Running alone along the road brands you a suspect. Exercise Physiologists should therefore organize small group exercise programme for endurance, physical fitness and total well-being of athletes and non-athletes. Hence the need for public education and supervision by cardiologists and exercise physiologists. Inactivity causes reduced vitality, lowered resistance to infections, lack of enthusiasm, inability to concentrate, nervousness, irritability, and insomnia (Oyewadume and Ugwu, 1996). And for the optimal management of diseased conditions, we recommend the consultation of qualified medical practitioners, particularly cardiologists and exercise Physiologists (Onyewadume and Ugwu, 1996).

Exercise Physiologists and Their Prescriptions and Administration for Healthcare Services to Individuals and Communities.

These will include the following: The dosage of the exercise in terms of frequency, intensity, duration, type, regularity, timing; understanding of one's health status, in aging and with medical problems is very important. Therefore, for exercise to be effective, it must be done continuously and consistently; not severe but moderately strenuous, depending on the goal(s). Exercise for recreation can be generalized but *for therapeutic / rehabilitation purposes*, it is individualized programmes and specific; premises/ environment must be safe especially for the aged the elderly, to avoid injuries; healthy ageing involving *eating a balanced diet, 3 regular meals and plenty of fluids* (preferably water) each day; *exercise regularly* – at least 30 minutes of moderately intense exercise daily; perform *exercise* that *involves balance* and walking, strength, flexibility and cardiorespiratory activities (see diagrams of different exercises); *keep your body weight within a healthy range*, [do you know your body mass index (BMI) and your waist circumference? (BMI =weight/height2), if not, find out or talk to your doctor]; *keep your mind active* – read, write, do crosswords, play music, play games, learn new activities or skills; don't smoke… it is never too late to quit!; avoid alcohol especially the older people; *try and get 7 – 8 hours of good quality sleep regularly*. "Sleeping Well Always" should be your watchword; *understand your medical conditions and your medication* – whether it is arthritis, high blood pressure, diabetes etc. Ensure that both are properly managed; have a *medical check-up at least once a year*. If there is a problem, early detection improves outcomes; early detection of cancer can save the person's life; *practice safety habits at home and in the community* to prevent falls and fractures; *maintain contacts with your family and friends*. Stay active and socially and productively engaged, through work, volunteering, recreational activities and involvement in the community; *be adaptive as your circumstances change*, look for opportunities to meet new friends, to take on new activities, learn new skills; *keep a positive attitude towards life and a sense of humour*. Do things that make you happy and give you meaning/purpose; smile and laugh, for these can be the panacea to your problems (Ugwu, 2007). The Exercise Physiologist can guarantee the proper execution of all the above procedures.

Advantages of Regular Exercise Especially Through Sweating

Here the Exercise Physiologist is also available to educate and guide the people on the advantages of regular Exercise especially through Sweating. Exercise causes the burning off of the assimilated or stored food materials which leads to the release of a number of calories of heat; should this heat be in excess of what the body needs, then sweating must occur to dissipate it. Therefore, sweating through exercise removes excess heat, waste products of metabolism from our bodies; tunes up the muscles, prevents and helps in recovery from diseases, and promotes health activities; builds up of stamina; thickens skin that age slowly but more gracefully with less wrinkles; improves metabolic rate; strengthens the bones and reduces bone diseases; enhances confidence, and quality of life, especially in the elderly; improves the strength, the co-ordination, and endurance of the heart and other muscles; reduces the incidence of cancer, especially breast cancer; helps to prevent and control non-insulin dependent diabetes by reducing body fatness; reduces body's requirement for insulin in Diabetics, since excess glucose in the body would have been utilized during exercise; reduces obesity; helps to achieve or maintain a healthy weight; psychological emancipation in which individuals commonly feel better after exercise ("via "runner's high" i.e. "endomorphins effect"); Exercise facilitates sleep; against diseases, exercise increases the functioning of the immune system (aerobic exercise in this case) and slows down the progress of AIDS/HIV infection; lowers blood cholesterol; reduces incidence of heart attacks, since the heart and the vasodilated blood vessels work better under exercise conditions; improves lung functions, especially in Asthmatics swimming in warm and humid atmosphere; improves rheumatoid arthritis, and finally exercise helps to reduce tension and anxiety; when one is tensed up or anxious about anything, our friend, the Clint, the Drunkard would say: Don't worry! Be happy! And I would add: Don't get worked up! Go for exercise!!! And be sure you sweat!!! Because, **"if you do not perspire, you will expire"** (Ugwu, 2007). But there must be caution in exercising, since over-exercising is harmful; hence the need for supervision from experts, like exercise physiologists. So while there is the need to sought for the great and enjoyable benefits from exercise, it is equally important to realize that moderation in everything in life, including exercise, is the key to longevity (Ugwu, 2007). In growing children & growing adults**,** exercise can help in building good bones, muscles and joint structures and enrich both body soft and hard tissue structures, and also enhances blood and hormonal flows while in the aging adults, exercise can retard aging parameters and enhance better health at old age.

For Fitness and Wellness, Exercise and Dance, are vital. Being rhythmic, dance is also the poetry of bodily motions and dancing in the Black Physique, involving the short periods of intense pounding of the ground with high powered energy by the dancer(s); is a conglomeration of the embodiments of human energy-pack, that can be translated into an unfolding elegance of beauty in shape and flexibility; and its flow

in space is the ultimate in the poetry of body motions; the physiology of which is very interesting but intricate; the sweat rate in vigorous dance is found to compare favourably with the sweat rate in 100 Meters Sprinting in the Olympics and World Athletic Competitions (Just watch Usain Bolt – the 100 and 200 metres World Champion- at the end of his race); the sweat rate can be tremendous and our findings reveal that profuse sweating is a hallmark of the proper execution of such dances(Ugwu, 2001; Ugwu and Ugwu, 2012b). Dancing is known to be a perfect exercise because it is known that the best exercise programme is the one that is safe, balanced, promotes fitness and in which the people will do regularly because they enjoy it. Some of the benefits of dancing are: strengthens bones and muscles and lubricates joints; improves your posture and balance, which can prevent falls; increases your stamina and flexibility; reduces stress and tension; improves mental functioning; enhances psychological well-being; builds confidence; provides opportunities to meet people and ward off illnesses like diabetes, high blood pressure, heart disease, osteoporosis and depression (Biebel, 2008). Other Forms of Exercise include: walking, jogging, athletics, cycling, football, basketball, golf, and so on and so forth (See diagrams of sports below by – Colbert and Colbert, 2010). All these when done rightly at their proper levels, especially under supervision of the Exercise Physiologists promote fitness and wellness of the individual.

Laughter is "the source of youthfulness". When you laugh, electrical impulses are triggered by nerves in your brain, which set off chemical reactions there and in other parts of the body; automatically, your endocrine system, also called the glandular system, issues orders to your brain to secrete its natural tranquilizers and painkillers (endomorphins); which ease anxiety in the wake of laughter, aid digestion, while others make the arteries contract and relax, thus improving blood flow – although not in asthmatic patients and so help to alleviate high blood pressure; hence, laugh off your pains, distress, worries and even your ailments and remain a "JOLLY FELLOW" who remains youthful in outlook; in contrast, if you frown always, then you have the direct opposite of the effects of laughter; for it takes about 14 facial muscles to frown while you need only 4 to smile; so why recruit a battalion of soldiers for what a military company can achieve; and to reap the most benefit, your laughter usually has to be hearty and loud; **remember to always look happy and confident and to smile as often as possible to your audience; I am personally a lover of smiles and the value of smile cannot be quantified.** As it is well known, smile costs you nothing but creates much; since it enriches those who receive it, without impoverishing those who give it; while it happens in a flash, the memory sometimes lasts forever; and remember that none are so rich that they can get along without it and none are so poor but are richer for its benefits; equally, it creates happiness in the home, fosters goodwill in a business and is the countersign of friends; it is also known that it is rest to the weary, daylight to the discouraged, sunshine to the sad and nature's best antidote for trouble; and with all these attributes, smile cannot be bought, borrowed, begged or stolen, for it is something that is no earthly good to anybody till it is given away; and so as you look happy and smile to your audience, you must endeavour to make your audience to be happy and also to smile; it is infectious in nature!!!(Ugwu and Ugwu, 2012a).

CONCLUSION: The duties of the Exercise Physiologists in health care delivery through exercise would therefore be to help you achieve all the attributes to exercise that are enumerated in this lecture. Hence, as a way of analogy, you are ruining your nice car by keeping it parked; in the same way, your healthy body was designed to move; it needs water, rest, food, and exercise to run smoothly; when you "park" yourself in a chair and you do not exercise, eventually you may ruin your engine; many people these days are sick because they have not stirred their waters with movement and action; they have become cesspools of disease due to stagnation; soon they will get to the point where they cannot exercise because their bodies are so broken down with heart disease, arthritis, and other degenerative diseases; "stirring the waters" with exercise has many powerful effects on your health; and so the earlier you adopt a healthy lifestyle through exercise, the better your changes of ageing well. However, it is never too late to start!

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