

MEDICAL HISTORY, PHYSICAL EXAMINATION AS A RECIPE FOR SUSTAINABLE HEALTHY LIVING

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Abstract

The paper examined the physical fitness testing techniques and the various methods used for pretest screening as recipe for sustainable healthy living. There is an increase in sudden death among Nigerians, due to sedentary lifestyle or inactivity. Automation and cybernation have not only reduced the work week for many, but have also greatly reduced muscular work in many Nigerians with the use of automobiles and engaging in sedentary recreational activities. This prevented man from not satisfying his biological needs for physical activity; therefore, the need for this physical fitness testing in order to prevent sudden death. The paper spelt out the purposes of the pre-participation in health screening as to identify individuals with medical contraindications to exercise, disease symptoms, risk factors and special needs, and concludes that the health screening procedures should be valid, cost-effective and time-efficient in order to prevent sudden death. The paper recommends that all sedentary persons should receive medical clearance prior to becoming more active, begin with a moderate exercise programme and testing should be performed by American College of Sports Medicine certified personnel.

Keywords: Informed consent, Medical history, Physical examination, Physical fitness testing.

Introduction

The individual must be physically, mentally, socially and emotionally fit in order to be able to perform activities of daily living such as bathing, dressing, eating, self-care, toileting, typing, carrying, walking and other manipulating skills. Health is wealth, without good health, the individual cannot live an active life, talk less of sustainability. Many people in this millennium live a sedentary

way of life due to the use of machines which prevented them from making use of their body for most of the activities of daily living.

Physical fitness is the ability to meet the ordinary as well as the unusual demands of daily life safely and effectively without being overly fatigued and still have energy left for leisure and recreational activities. Physical fitness is classified into health-related fitness, skill-

related and physiologic fitness components. These components contribute to an individual's overall level of fitness. In terms of general health promotion and wellness, the main emphasis of physical fitness programmes should be on the health-related components. (Hoeger & Hoeger, 2007).

Hahn, Teutsch, Paffenbarger and Marks (1990), Hoeger and Hoeger (2007) stated the benefits of regular physical activity, as improvement in cardiorespiratory function, reduction in Coronary Artery disease risk factors, decreased mortality and morbidity, decreased anxiety and depression, enhance feelings of wellbeing and enhanced performance of work, recreational and sport activities. To corroborate this Elizabeth and Linda (2016) opined that participation in regular physical activity associated with a multitude of benefits including reduction in chronic disease and premature mortality and improved quality of life.

Automation and cybernation have not only reduced the work week for many, but have also greatly reduced muscular work in many Nigerians. With television. Radio, movies and other sedentary recreational activities, and the wide use of automobiles with power steering, "push button" windows and seats in automobiles,

man is not satisfying his biological need for physical activity. Illness and death from degenerative diseases are increasing. Automation also reduces the pride and satisfaction man takes in his work, and the population explosion, increased urbanization and growing population limit the freedom and enjoyment of his leisure time.

The purpose of the pre-exercise screening is to prevent sudden death. Sudden cardiac death is an unexpected natural death from cardiac cause with 1 hour of the onset of symptoms (Zypes, 1998).

The causes of sudden death as identified by Bagnall (2016) were coronary artery disease (especially in the 30-35 years of age) and cardiomyopathies. In their own findings, Finacchiaro, Papadakis and Robertus (2016) through autopsy identified the causes of sudden death as coronary artery disease, idiopathic interstitial fibrosis or hypertrophy and genetic factors. Booth and Kohl (2016) submitted that physical inactivity and chronic diseases caused sudden death.

To prevent sudden death, there is need for regular exercise for the prevention of chronic diseases and maintenance of a healthy lifestyle and longevity. To achieve this there is need for

health screening ‘wellness check’ before taking part in physical activities.

Preliminary health screening information from medical and physical examination is a sine qua non in the assessment of clients physical fitness profile. This information is important for the classification of person’s health status and lifestyle. The information gathered from the initial health and lifestyle evaluations help in screening clients for physical fitness testing, identifying individuals with medical contraindications to exercise with disease symptoms and risk factors and identifying individuals with special needs.

Purpose of the study

The purpose of the study is to determine client’s readiness for physical activity and to review client’s past and present personal and family health history focusing on conditions requiring medical referral and clearance for sustainable healthy living.

Statement of the problem

There is prevalence of sudden death due to cardiac arrest among the citizens in Nigeria. The widespread is due to failure of most Nigerians to address health issues at the appropriate time before it aggravates to uncontrollable conditions.

They fail to do regular medical checkup at least once a year as recommended by American College of Sports Medicine (ACSM, 1995). This failure makes early diagnosis of chronic cardiovascular diseases like diabetes mellitus, hyperlipidemia and hypertension impossible.

Other factors that may cause sudden death without prior medical examinations includes sedentary lifestyle, inactivity and the use of automobiles which reduces performance of activities of daily living. Early detection of the diseases through Medical history, Physical Activity Readiness Questionnaire (PAR-Q) and other medical examination before the diseases become uncontrollable will prevent sudden death among Nigerians.

Health screening for physical activity

Health Screening for physical activity as opined by American college of sports medicine (ACSM, 1995) is to optimize safety during exercise testing and participation, and to permit the development of a sound and effective exercise prescription, initial screening of participants relative to important health factors is necessary for both the apparently and those with chronic disease. ACSM also spelt out the purposes of the pre-participation in health screening as:

1. Identification and exclusion of individuals with medical contraindications to exercise
2. Identification of individuals with disease symptoms and risk factors for disease development who should receive medical evaluation before starting an exercise programme.
3. Identification of persons with clinically significant disease considerations who should participate in a medically supervised exercise programme.
4. Identification of individuals with other special needs.

In their own submission, Brian, Brian and Gregory (2017) identified the purpose of an annual physical examination also known as “Wellness Check” as a test to determine the general status of someone’s health, this test should be carried out by Primary Care Provider (PCP) or certified ACSM personnel which could be a medical doctor, a nurse practitioner, or a physician assistant. During the examination, the clients are free to talk to the PCP or ACSM certified personnel about any ongoing pain or symptoms that the clients are experiencing or any other health concerns that they might have. Brian, Brian and Gregory

(2017) recommended that a physical examination should be carried out at least once a year, especially in people over the age of 50. These examinations are used to;

1. Check for possible diseases so they can be treated early
2. Identify any issues that may become medical concerns in the future
3. Update concerns in the future
4. Update necessary immunizations
5. Ensure that a healthy diet and exercise routine are maintained
6. Check cholesterol, blood pressure and blood sugar levels
7. Build a relationship with the Primary Care Provider (PCP). So that these conditions can be treated before they become severe.

The health screening procedures should be valid, cost-effective and time-efficient. Procedures range from self-administered questionnaires to sophisticated diagnostic tests. The Physical Activity Readiness Questionnaire (PAR-Q) (Thomas, 1992) has been recommended as a minimal standard for entry into low-to-moderate intensity exercise programme.

Physical Activity Readiness Questionnaire (PAR-Q)

PAR-Q is a questionnaire for people aged 15 to 69. To determine a client's readiness for physical activity. It was designed to identify individuals as having lower or higher risk. Higher risk

individuals were required to obtain medical exercise clearance prior to enrolment for physical activity (Thomas, Reading & Shepherd, 1992).

Table 1: Physical Activity Readiness Questionnaire (PAR-Q) for assessing readiness for physical activity.

S/N		YES	NO
1.	Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?		
2.	Do you feel pain in your chest when you do a physical activity?		
3.	In the past month, have you had chest pain when you were no doing physical activity?		
4.	Do you lose your balance because of dizziness or do you ever lose consciousness?		
5.	Do you have a bone or joint problem that could be made worse by a change in your physical activity?		
6.	Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?		
7.	Do you know of any other reason why you should not do physical activity?		

Table 1 shows the PAR-Q, has seven questions designed to identify individuals who need medical clearance from their physician before taking any physical fitness tests or starting an exercise programme. If client answered 'Yes' to one or more of the questions, they are referred to their physician to obtain medical clearance before engaging in physical activity.

When the medical clearance is obtained, clients are advised to start the activity slowly and gradually increase the intensity of the activity (principle of

progressive overload), in order to prevent

the clients from being injured. Clients are also advised to restrict their activities to the ones that are safe for them, they are encouraged to find out which community programmes are safe and helpful for them.

If clients answered 'No' to all PAR-Q questions honestly, it means the clients are fit to engage in physical activities bearing the principle of progressive overload in mind, starting the activities slowly and gradually increase the intensity of the activities until the activities can be effectively performed and fitness level achieved.

Table 2: Informed Consent for PAR-Q

I have read, understood and completed this questionnaire. Any questions I had were answered to my full satisfaction

NAME _____

SIGNATURE _____ DATE _____

SIGNATURE OF PATIENT _____ WITNESS _____
OR GUARDIAN (for participants under the age of majority)

Source: ACSM Guidelines (1995)

Table 2 shows the informed consent given to the client before participating in physical activities programme or a fitness appraisal. It is used for legal or administrative purpose in case a client is injured when performing the activities, this serves as insurance cover for the trainer. Clients are advised not to take part in physical activity if they are not feeling well because of a temporary illness such as a cold or fever. They are advised to wait until they feel better before they can take part in the activities. Clients that are pregnant should obtain medical clearance from a doctor before engaging in physical activities.

Preparation for Physical Examination

The Client should make appointment with the Primary Care Provider (PCP) and gather the following

paperwork before the physical examination:

1. List of current medications taken, including over the counter drugs and any herbal supplements.
2. List of any symptoms or pain experienced by the client.
3. Results from any recent or relevant tests
4. Medical and surgical history.
5. Names and contact information for other doctors the client has seen recently.
6. A copy of front and back of an implanted device such as a pacemaker or defibrillator.
7. Any additional questions the client would like to be answered.

The client should dress in comfortable clothing that would allow the Primary Care Provider (PCP) to perform

full examination of the clients' body (Brian, et al, 2017).

Pre-test Evaluation

Medical History: The pretest medical history should be carried out thoroughly. This should include remote and recent past history on the following components of the medical history: medical diagnoses, previous physical examination findings, history of symptoms, recent illness, hospitalization, or surgical procedures, orthopedic problems, medical use and drug allergies, other habits, exercise history, work history and family history (ACSM guidelines, 1995).

Physical Examination: Preliminary Physical examination should be performed by the attending physician or other qualified personnel prior to others on the following components of the Physical Examination:

1. Body weight in some instances, determination of body composition (percent body fat) may also be desirable
2. Pulse rate and regularity
3. Resting blood pressure, supine and standing
4. Auscultation of the lungs with specific attention to uniformity of breath sounds in all areas (absence of rales, wheezes, and other breathing sounds)
5. Palpation of the cardiac apical impulse
6. Auscultation of the heart with specific attention to murmurs, gallops, clicks, and rubs
7. Palpation and auscultation of carotid, abdominal, and femoral arteries
8. Palpation and inspection of lower extremities for edema and presence of arterial pulses
9. Absence or presence of xanthoma and xanthelasma
10. Follow-up examination related to orthopedic or other medical conditions which would limit exercise testing
11. Tests of neurological function, including reflexes

Source: ACSM Guidelines (1995)

Administration of Physical Examination

Prior to meeting the primary care Provider, a nurse will ask series of questions on Physical Activity Readiness Questionnaire (PAR-Q), Medical history and Physical examination, the answer to the questions will determine the action to

be taken by the PCP. The Primary Care provider starts the examination by inspecting the patient's body for unusual marks on growths. Feeling the patient's abdomen and other parts of the body for consistency, location, size, tenderness, and texture of the patients' individual organs. The examination can be done in standing, sitting or lying positions.

The PCP will use a stethoscope to listen to the various parts of the body like the heart to make sure no abnormal sound and that the heart rhythm is okay. The PCP also used a percussion technique to discover fluid in areas where it should not be, as well as locate the borders, consistency, and size of organs. Other parts of the body checked by the PCP are the height, weight and pulse rate. When the patient is being certified fit, he or she can take part in physical activities.

Conclusion

The study observed that there is need for physical fitness testing before engaging in physical activities in order to determine the fitness status of the individual prior to exercise. Physical fitness testing is used to determine the fitness status of the individual. After being certified fit to take part in exercises, engaging in moderate intensity exercises 2 to 3 times a week enhances the fitness

level of the individual. Regular medical examination is a sine qua non in the prevention of the cardiovascular diseases so that man can do activities of daily living, which promotes sustainable healthy living. Prescribing the type of exercise most suitable for the fitness status of the individual will prevent sudden death.

Recommendations

1. Patients should do physical exercises of moderate intensity 2 to 3 times a week after being certified fit by a medical personnel
2. There should be health status check up once in a year, with the use of simplest methods of medical checkup on blood pressure and Body mass index.
3. Patients should participate in structured exercise and patient education (based on physician referral and conscientious of the rehabilitation team).
4. Patients should not take part in physical activity when the systolic blood pressure is $>200\text{mmHg}$ or resting diastolic blood pressure $>110\text{mmHg}$ where there is a drop in blood pressure ($>20\text{mmHg}$ with symptoms) when there is uncontrolled sinus tachycardia (>120 beats/min) when there is

uncontrolled diabetes (resting blood glucose >400mg/dl).

5. Patients should engage in activity counseling and family education.
6. Patients should engage in self-care activities, arm and legs range of motion movement and other low-resistance activities. The posture in which activities should be performed should progress from lying to sitting to standing.
7. Dosage of exercise to be given should be based on medical history, clinical status and symptoms
8. Intensity, duration, frequency and progression of exercise should be considered for the patients.

References

- American College of Sports medicine (1995). ACSM's guidelines for exercise testing and prescription. Williams and Wilkins. A Waverly Publishing company.
- Bagrall, R.D., Weintrauls, R.G., Ingles, J. et al (2016). A prospective study of sudden cardiac death among children and young Adults. *New England Journal of Medicine*. 374(25):2441-52
- Booth. F.W., Roberts, C.K., Laye, M.J. (2012). Lack of exercise is a major cause of chronic diseases. *Comprehensive Physiology*. 2(2):1143-211
- Brian, K., Brian, W., & Gregory, M., (2017). Physical Examination. *Health line*
- Canadian Society for Exercise Physiology Physical Activity and Readiness Questionnaire: PAR-Q and You. <http://www.csep.ca/cmfiles/publications/parq/par-q.pdf>. Retrieved on 15th April, 2020.
- Elizabeth, A., & Linda, S.P., (2016). Pre-exercise Screening: role of the primary care physician. *Isreal Journal of Health Policy Research*. 5(29) <http://dx.doi.org/10.1186/s13584-016-0066-7>.
- Finacchiaro, G., Papadakis, M., Robertus, J.L. (2016). Etiology of sudden death in supports: Insights from a United Kingdom Regional Registry. *Journal American College of Cardiology*. 67(18):108-15
- Hahn, R.A., Teutsch, S.M., Paffenbarger, R.S., & Marks, J. S. (1990) Excess deaths from nine chronic diseases in the United States. *Journal of American Medical Association*. 264:2654-2659.
- Hoeger W.K., & Hoeger, S.A. (2007). Principles and Laboratory for physical fitness and wellness. Englewood,

- Colorado, Morton Publishing Company.
- Kohl, H.W., Craig, C.L., Lambert, E.V. (2012). The pandemic of physical activity: global action for public health. *Lancet*. 380:294-305.
- Thomas, S., Reading, J., & Shephard R.J. (1992). Revision of the physical Activity Readiness Questionnaire (PAR-Q). *Canadian Journal of Sports Science*. 17:338-345.
- Warburton, D., Jamnik, V., Bredin, S., & Gledhill, N (2011). The Physical Activity Readiness Questionnaire for Everyone (PAR-Q⁺) and Electronic Physical Activity Readiness Medical Examination (ePARmed-X⁺). *The Health & Fitness Journal of Canada*. 4(2) 3-17.
Doi:<https://doi.org/10.14288/hfjc.v41.2.103>.
- Warburton, D.E., Gledhill, N., Jamnik, V.K., Bredin, S.S., McKenzie, D.C., Stone, J. (2011). Evidence-based risk assessment and recommendation for physical activity clearance: consensus document 2011. *Applied Physiology Nutrition and Metabolism*. 36 supp 11:5266-98.
- Whitfield, G.P., Pettee, G.K.K., Rahbar, M.H., & Kohl, H.W (2004). Application of the American Heart Association/American College of Sports Medicine Adult Preparation Screening Checklist to a nationally representative sample of US adults aged >40 years from the National Health and Nutrition Examination Survey 2001 to 2004. *Circulation*. 129:1113-20
- Zipes, D.P., & Wellens, H.J. (1998). Sudden cardiac death. *Circulation*. 98(21):2334-51.