APPRAISAL OF PERIODIC HEALTH EVALUATION AMONG ACADEMIC STAFF OF TERTIARY INSTITUTIONS OF NORTHWEST NIGERIA

BY

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SPS/12/MHE/00030

BEING A DISSERTATION SUBMITTED TO THE DEPARTMENT OF PHYSICAL AND HEALTH EDUCATION, BAYERO UNIVERSITY, KANO, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN HEALTH EDUCATION

SUPERVISED BY

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NOVEMBER, 2015

DECLARATION

I hereby declare that this work (Appraisal of Periodic Health Evaluation among Academic Staff of Tertiary Institutions of Northwest-Nigeria) is the product of my own research effort under the supervision of Dr.A.M.Getso and that it has not been presented and will not be presented elsewhere for the award of a degree or certificate. All sources have been duly acknowledged.

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APPROVAL PAGE

This research work has been read and approved as meeting the requirements for the award of master of science degree in Health Education in the Department of Physical and Health Education, Bayero University, Kano.

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This dissertation is dedicated to the entire family of Late Malam Abdullahi Mai Sabon Gida Getso.

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ABSTRACT

This study appraised periodic health evaluation among academic staff of tertiary institutions of Northwest-Nigeria. Two research questions were asked, two major hypotheses and six sub-hypotheses were developed. The study adapted descriptive design of survey method. Population of the study comprised all academic staff of tertiary institutions in Northwest-Nigeria (47,251) out of which 384 participants were drawn as a sample for this study using proportionate sampling of equal distribution and simple random sampling techniques. The instrument used for this study was a researcher developed questionnaire validated and standardized with a reliability of r=0.85.A total number of 384 copies of the questionnaire were distributed but only 355 were duly completed, returned and used for analysis. Frequency counts and percentages were used to organize and describe the demographic information of the participants. Chi-square was used to test all the hypotheses. All tests were performed at alpha level of 0.05. The findings revealed that: Academic staff of Northwest-Nigeria have significant knowledge and practice of periodic health evaluation, older academic staff have higher level of knowledge of periodic health evaluation than their younger colleagues, male and female academic staff have similar levels of knowledge of periodic health evaluation, academic staff have similar levels of knowledge of periodic health evaluation regardless of types of their institutions, younger academic staff have higher level of practice of periodic health evaluation than their older colleagues, female academic staff have higher level of practice of periodic health evaluation than their male colleagues, academic staff have similar levels of non-practice of periodic health evaluation regardless of types of their institutions. The implication of this study is that, if more standard health facilities and services are provided, the academic staff of tertiary institutions will have more knowledge and practice of periodic health evaluation. It was recommended among others that management of tertiary institutions in Northwest Nigeria in collaboration with NGOs and Federal Ministry of Health should intensify campaign on the values of periodic health evaluation.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Periodic Health Evaluation is a comprehensive concept in which a team of specialists in preventive medicine work together to study patient's health status, identify any risk factors and establish which diagnoses/treatment should be carried out to achieve good health (ClinicaPlanas, 2011). The history of periodic health evaluation started with five selected cases: Screening for psychiatric disorders in the United States army in 1917. It is one of the oldest screening programmes. The Wasserman test for syphilis is also one of the oldest screening tests available. Its sensitivity and specificity were known at the beginning of the 20th century. The urine and blood glucose tests for diabetes have been intensively used in mass screening since the 1940s and this is one of the first examples of modern forms of screening. The pap test for cervical cancer is one of the rare screening programmes that have achieved an almost exhaustive coverage in many female populations of the world especially in the Western Europe by the middle of the 19th century. Finally, mammographic screening for breast cancer virtually started in the 1960s (Commission on Chronic Illness, 2005).

Ten individuals are responsible for the development of modern physical diagnosis: Hippocrates, Vesaluis, Morgagni, Sydenham, Auenbrugger, Corvisart, Laennec Louis, Mueller and Osler (Hervey, 1993). According to Boulware (2007), the roots of periodic health evaluation are not entirely clear. It seems to have been advocated since 1920s. Some authors like Mattlin and Dodd (2010) pointed to plead from the 19th to 20th century for early detection of diseases like tuberculosis and periodic school health examinations. The advent of medical insurance and related commercial influences of health services seem to have promoted the periodic health evaluation, whereas this practice has been subjected to controversy in the era of evidence based medicine.

In Nigeria, the study conducted by Eke, Eke, Joe, Ikechebulu and Okoye (2012), showed a high level of awareness of periodic health evaluation though the actual level of practice among Nigerian traders was very low. Also, a poor knowledge of the various types of periodic health evaluation was noted, except for general examination and blood pressure measurement which were well known to them. Age, gender and educational status were not found to affect the practice of periodic health evaluation. Moreover, Adamu, Abiola and Ibrahim (2013), found out that, the proportion of people with adequate knowledge of periodic health evaluation in Birnin-Kebbi, Northwest-Nigeria was very low and their practice was similarly poor. Nevertheless, the general knowledge of cervical cancer screening was good and the attitude was fair. However, this did not translate to good practice. High cost of screening, inadequate female health workers and fear of the outcome, were some of the reasons for low screening patronage among women in secondary health care institutions in Northwest-Nigeria (Holland & Stewart, 1990).

1.2 Statement of the Problem

Regular health evaluation can help to identify health problems before their commencement, when the chances for treatment and care are better. Examinations and screenings of health conditions of an individual depend on age, health, family history and lifestyles choices (such as what one eats, how active one is and whether one smokes or not). Healthy lifestyle is yet to gain acceptance amidst many societies. Job related stress, unhealthy eating habits, inadequate rest, high levels of pollution all contribute to health problems today (Medlineplus, 2014). However, many academic staff of tertiary institutions of Northwest-Nigeria seem not to have much concern about their health status until late in their disease conditions when they start to develop symptoms of diseases. For example, the researcher witnessed many cases of academic staff of Bayero University, Kano who died of hypertension, stroke, diabetes, cancer, HIV/AIDs just to mention but few and some were brought to the University Clinic in critical conditions after developing the symptoms of diseases which were supposed to have been detected through periodic health evaluation. Also, the researcher obtained similar information

from many colleagues working in the clinics of tertiary institutions of Northwest-Nigeria, such as Federal College of EducationKano, Ahmadu Bello University Zaria, Usman Danfodio University, Sokoto, Federal University of Technology, Minna, FederalUnivesity, Dutsemma and Federal College of Education Katsina. Bassey, Nicholas, Modele, Adekunle andAdebayo (2011), insisted that, people who are aware of their health status can access care and support services and initiate treatment early. Therefore, this study appraised the periodic health evaluation among tertiary institutions' academic staff of Northwest- Nigeria.

Despite the provision of facilities and equipment for periodic health evaluation by most tertiary institutions of the Northwest-Nigeria, based on the researcher's experience as a staff of B.U.K clinic for 12 years and the information obtained from colleagues of other tertiary institutions' clinics, it was observed that most academic staff who were diagnosed with chronic diseases such as hypertension, diabetes and cancer, just to mention but a few did not seem to check their health status routinely and did not know whether they had these diseases or not until when their conditions become worst. Evidently, there are some health cases the researcher and his colleagues witnessed: A lecturer from one of the departments in B.U.K suddenly collapsed on a weekend as a result of diabetes and died without knowing that he was diabetic. The second victim was an academic staff from the Biochemistry Department of Federal University of Technology, Minna, who fell in the office and was brought unconscious to the clinic due to hypertension which was unknown to him. Next was the case of a lecturer in the faculty of medicine of A.B.U, Zaria, who collapsed in the office due to heart attack and died. Another case was that of a staff of the Health Services Department of Federal University, Dutsenma who had diabetic sore on the toe and went to the private clinic to amputate it but later discovered that it was diabetes that prevented the wound from healing. To buttress this, Daego Medical Tourism Information Centre (2012), reported that, periodic health evaluation is a great opportunity to discover any abnormalities and to learn about one's health condition which is

usually followed by a treatment plan and/or some advice given by a specialist regarding how to improve one's health condition.

In view of the above , the researcher used health belief model to appraise knowledge and practice of periodic health evaluation among tertiary institutions' academic staff of Northwest Nigeria. This study provided answers to the following research questions:

(1.) Do academic staff of tertiary institutions in Northwest-Nigeria have knowledge of periodic health evaluation?

(2.) Do academic staff of tertiary institutions in Northwest-Nigeria practice periodic health evaluation?

1.3 Hypotheses

The following hypotheses were formulated to guide the study:

Major Hypothesis

Academic staff of tertiary institutions in Northwest-Nigeria do not have significant knowledge of periodic health evaluation.

Sub-Hypotheses

1. Younger academic staff of tertiary institutions in Northwesr Nigeria do not significantly differ from their older colleagues in their knowledge of periodic health evaluation.
2. Male academic staff of tertiary institutions in Northwest Nigeria do not significantly differ from their female colleagues in their knowledge of periodic health evaluation.
3. Academic staff of tertiary institutions in Northwest Nigeria do not significantly differ in their knowledge of periodic health evaluation base on type of institutions.

Major Hypothesis

Academic staff of tertiary institutions in Northwest-Nigeria do not significantly practice periodic health evaluation.

Sub-Hypotheses

1. Younger academic staff of tertiary institutions in Northwest Nigeria do not significantly differ from their older colleagues in their practice of periodic health evaluation.

2. Male academic staff of tertiary institutions in Northwest Nigeria do not significantly differ from their female colleagues in their practice of periodic health evaluation.

3. Academic staff of tertiary institution in Northwest Nigeria do not significantly differ in their practice of periodic health evaluation based on types of institution.

1.4 Purpose of the study

The purpose of this study was to appraise periodic health evaluation among tertiary institutions' academic staff of Northwest-Nigeria, with the view of bringing to limelight the importance of periodic health evaluation among academic staff.

1.5 Significance of the Study

The outcome of this research will be of benefit in the following ways:

- The findings of this research will help the academic staff of tertiary institutions of Northwest-Nigeria to be more aware of periodic health evaluation.
- The findings of this research will assist government and nongovernmental organizations to create more awareness on periodic health evaluation through organizing seminars, workshops and public lecture.

- It will also help those hoping to conduct related researches by increasing literature on periodic health evaluation.

1.6 Delimitation of the Study

The study appraised the periodic health evaluation among academic staff of tertiary institutions of Northwest-Nigeria. It was delimited to Knowledge and Practice and to the following variables: Age, Gender, Types of Institution and Selected Tertiary Institutions in the Northwest-Nigeria: Bayero University, Kano, Ahmadu Bello University, Zaria, Federal University, Dutse, Sa'adatu Rimi College of Education, Kumbotso, Federal College of Education, Katsina, Federal College of Education, Kano, Kano State Polytechnic, Kaduna Federal Polytechnic and Federal Polytechnic Kaura Namoda. Schools of Nursing, Midwifery and Health Technology were not selected because they are controlled by state ministries of health, hence do not have full autonomy and therefore have different characteristics with the selected tertiary institutions.

1.7 Limitation of the Study

Three hundred and eighty four (384) questionnaire forms were administered but only three hundred and fifty five (355) were returned and used for data analysis because some institutions used for this study were not on session during retrieval of the questionnaire and this did not affect the findings of the study.

1.8 Operational Definition of Terms

The following terms were defined as used in the study:

Knowledge of periodic health evaluation: Is the information, awareness or understanding of academic staff on routine medical examination.

Practice of periodic health evaluation: Is the habit or behaviuor of academic staff towards routine medical examination.

Periodic health evaluation: Is a thorough physical examination (for diseases such as diabetes, hypertension, sickle cells, cancers etcetera) which includes a variety of tests, depending on the age, sex and health of the person and which is usually carried out on annual basis.

Younger staff: Are academic staff aged 20-40 years.

Older staff: Are academic staff aged 41 years and above.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This study appraised periodic health evaluation among academic staff of tertiary institutions in Northwest-Nigeria. Literature related to this work was reviewed under the following sub-headings:

- Theoretical framework.
- Overview of periodic health evaluation.
- Knowledge of periodic health evaluation.
- Practice of periodic health evaluation.
- Factors influencing periodic health evaluation.
- Types and procedures of tests for periodic health evaluation.
- Summary

2.2 Theoretical Framework

The theoretical framework which best describes knowledge and practice of periodic health evaluation among academic staff is the health belief model. According to Glanz and Bishop (2010), the health belief model is a psychological health behavior change model developed to explain and predict health related behaviuor, particularly with regards to the uptake of health services. One of the first theories of health behaviour, the health belief model was developed in the 1950s by social psychologists; Rosenstock, Hochbaum, Kegeles and Leventhal at the U.S. Public Health Services to better understand the widespread failure of screening programs for tuberculosis, diabetics, hypertension and cancer. The health belief model has been applied to predict a wide variety of health related behaviors such as being screened for early detection of asymptomatic diseases and getting vaccinated (Carpenter, 2010).

Glanz, Barbara and Viswanath (2008) stated that, seven (7) constructs of the health belief model are proposed to vary between individuals and predict engagement in health related behavior such as getting vaccinated getting screened for asymptomatic disease or exercising: Perceived severity refers to subjective assessment of the severity of a health problem and its potential consequences. Perceived susceptibility refers to the subjective assessment of risk of developing a health problem. While perceived benefit refers to an individual's assessment of the value of efficacy of engaging in health promoting behaviuor to decrease risk of disease. Perceived barriers also refer to an individual's assessment of the obstacles to behaviuor change. Cues to action are things such as pain, symptoms, sickness of a friend etcetera that make one takes action to promote his or her health. Self efficacy refers to an individual's perception of his or her competence to successfully perform a behaviuor while modifying variables are characteristics, including demographic, psychological and structural variables that can affect individual's perceptions to certain disease (Stretcher & Irwin, 1997).

Therefore, health belief model believed that there are certain behaviours that influence individuals to value their health and take necessary measures to prevent disease and promote health. This study shall be focusing mainly on knowledge and practice of periodic health evaluation among academic staff. In Nigeria today, if periodic health evaluation is not promoted there will be an increase in morbidity and mortality rates leading to collapse of all systems which results in reduced productivity (Carpenter, 2010).

2.3 Overview of Periodic Health Evaluation

Periodic Health Evaluation is an examination of individual's current state of health, often carried out by professional health practitioners. Health Evaluation begins from conception to birth and passes through old age. Individuals undergo a variety of tests to ensure that they are on the right track of good health. As individual gets older he becomes vulnerable to illness. In order to reduce this risk, a number of health checks or screening tests are recommended at different stages of life (Braun, 2012).

ClinicaPlanas (2011) defined Periodic Health Evaluation as a comprehensive concept in which a team of specialist in different area of preventive medicine works together. These professionals have access to the latest technology with which to study the patients health and identify any risk factors that may compromise his/her health in the future. Patient and doctor work together to establish which diagnoses and tests should be carried out in order to achieve the final aim, which is good health. Age, gender, family medical history and patient's medical records are the pillars on which each case is customized.

After the health evaluation, the general practitioner will carry out "face to face" interview with the patient. This meeting involves no machinery, no analysis and no diagnostic techniques. It is an evaluation of the result between just the patient and the doctor. Here, all the data that have been collected are checked and a final diagnosis is made, lifestyle habits are changed, treatment is proposed and future actions are defined. At this point, just the patient and the doctor are aware of the general health condition (Clinica Planas, 2011). According to the freeDictionary (2012), a physical examination is an evaluation of the body and its functions using inspection, palpation (feeling with the hands), percussion (tapping with fingers), and auscultation (listening). A complete health assessment also includes gathering of information about a person's medical history and lifestyle, doing laboratory test, and screening for diseases.

Daegu Medical Tourism Information Center (2012) also defined basic health evaluation as a great opportunity to discover any physical abnormalities and to learn about one's physical condition. A checkup is usually followed by a treatment plan and/or some advice given by a specialist regarding how to improve the patient health. These days, even though people are interested in their health, they are often too busy and forget to schedule an appointment. As a result of this lack of attention is being paid to one's health, adult diseases caused by stress, unsafe diets, being overworked, environmental pollution, lack of exercise or living in a harmful environment have detrimental effects to the quality

of life. In order to help to stay healthy and discover any problems earlier on, periodic health evaluation is essential.

Periodic health evaluation is a common form of preventive medicine involving visit to general practitioner medicine by well feeling adults on a regular basis. This is generally yearly or less frequently. It is known under several other names, such as the periodic health evaluation annual physical, comprehensive medical examination, general health check or preventive health examination. The term is generally meant to include visit for the purpose of newborn checkups, pap smear for cervical cancer, or regular visit for people with certain chronic medical disorder such as diabetes. The general medical examination usually involves a medical history, (brief or complete). Physical examinations and sometimes laboratory tests. Some more advanced tests include ultra sound and mammography (Eke, Eke, Joe, Ikechebelu & Okoye, 2012).

Dimatxi (2013) also defined health evaluation as a medical examination which aims to determine ones health status. Health evaluation includes a series of interviews and medical examination. The type and scope of the health evaluation varies, depending on the needs and demands. Periodic health evaluation aims at detecting early health problem that has not shown any symptoms, particularly cardiovascular diseases, kidney diseases, liver diseases and diabetes mellitus. In addition to early detection of diseases, health evaluation also determines the level of fitness and general health.

According to Boulware (2007), screening refers to a medical test or series of test used to detect or predict the presence of disease in individual at risk for diseases within a defined group such as population, family or work force. Screening may be performed to monitor diseases prevalence, manage epidemiology, aid in prevention or strictly for statistical purpose. Example of screening include measuring the level of Thyroid stimulating hormone (TSH) in the blood of a newborn as part of new born screening for congenital hypothyroidism, checking for lung cancer in non-smoking

individuals who are exposed to second-hand smoke in an unregulated working environment and pap smear screening for prevention or early detection of cervical cancer.

The periodic health evaluation includes clinical preventive services usually delivered by primary health clinicians to persons with no signs and symptoms of illness as part of a routine health care process. Central to the periodic health examination is the effectiveness of prevention for improving the health outcomes. The U.S preventive services task force developed recommendation for components of a periodic health examination based on age, sex and risk factors (Ratcliffe, Halperin, Frazier, Sundin, Delaney & Hornung, 1986)

Purpose and Importance of Periodic Health Evaluation

Since the academic staff are strong bodies in every tertiary institution and are expected to benefit from periodic health evaluation, a good understanding of preventive health behavior among these staff is essential for initiating population specific health programmes. An annual health evaluation is one of the best things that help to maintain good health (Kumar, 2014).

According to Laure (2008), a comprehensive health evaluation provides an opportunity for the healthcare professional to obtain baseline information about the patient for future use, and to establish a relationship before problems happen. It provides an opportunity to answer questions and teach good health practice. Detecting a problem in its early stages can have long-term results. All general health checks share a common goal: to reduce morbidity and mortality by detecting disease or modifiable factors at an earlier stage, implicitly assuming that this will improve clinical outcomes compared with waiting until symptoms develop. It is important to understand that many mild and critical diseases and disorders can be prevented or controlled if detected early. Not only do regular visits to the doctor helps ensure an early diagnosis, but one can also get up-to-date prescription.

National Institute of Health (2011) stated that nearly half of health disorders people are facing today are somehow connected to stress. Due to economic conditions being felt by many families. There has

been a remarkable increase in stress related health disorders, which in some cases are life threatening. Because of the increasing hypertension symptoms, many people instead of visiting the doctor for treatment of cold, flue or constant stomachache are now dealing with these illnesses through some form of home remedies. Through home remedies, one can deal with these health issues for the time being but the real cause of the problems remain unaddressed and resulted in a complicated disease in future, this can only be prevented through periodic health evaluation.

Every second, person around us is diagnosed as a patient of diabetes, hypertension or high cholesterol. Without regular blood scan it is very difficult to deal with them in timely manner before they become life threatening . It is very necessary for people to be aware of what is high cholesterol foods and general knowledge about cholesterol level. Similarly, diabetes causes so many complications in the body. How many people actually know about diabetes its symptoms and causes? By going for annual health evaluation and examination people can stay abreast of the state of your health (Krans, 2012).

Thomson & Tonelli (2012) stated that, financial hardship bound many of people to forgo annual medical checkup but people should understand that having a mammogram and follow up visit is much less costly than paying thousands of naira for the treatment of breast cancer. In short, spending little money now can save some big money (not to mention pains and heartache) in the future. Hence visiting the doctor regularly for checkups is always a smart choice.

ClinicaPlanas (2011) asserted that, health checkup programmes enable the doctor to to precisely evaluate each patient's health condition. This helps to:

- Get ahead of ones self so as to achieve the best health conditions.
- Diagnose and treat asymptomatic diseases before they appear in order to achieve healing.
- Diagnose and treat symptomatic and already declared diseases to achieve healing, as well as to avoid further development and repercussions on other organs or system.

- Identify risk factor that could compromise ones future health

The aim of health checkup is to help find, prevent or lessen the effect of health issues. It is like getting one's car serviced before it breaks down. It is better to avoid disease than to treat it. Although some checks can be uncomfortable, they provide the general practitioner or specialist with an opportunity to look at the patient's lifestyles, medical history and family history to find out if he/she is at risk. Having regularly checkups has several advantages. Most importantly, one will build relationship overtime and are more likely to feel comfortable talking openly. Also, the doctor will get to know and understand the patient's health needs and concerns. By having a regular health evaluation, ones medical history stays in the one place and is likely to be kept up to date (ClinicaPlanas, 2011).

Getting a periodic health evaluation is important for everyone, particularly those with chronic health problems, a complicated health history or genetic predisposition to certain conditions. Regardless of one's age, gender or medical history, its great idea to get a Periodic health evaluation once a year. There are many benefits that come from getting a regular annual health evaluation for prevention and early detection of potential health problems which are the most significant benefits. Others include peace of mind and a more comprehensive health history that can help you make informed health decisions throughout ones lifetime (wakemedphysicians.com, 2014).

Pilot and Beck (2004) emphasized that all schools should carry out the statutory medical examinations required by students and the teachers at the start and end of the courses. The purpose of this examination is to certify their fitness to withstand the rigors of the professional lives and make sure that they are fit to be placed in charge of children. As would be expected with young men and women in their late teens or early twenties, it is uncommon to find serious illnesses. However minor disabilities are diagnosed such as hernia, anemia, skin problems and minor neuroses. But the most

important part of an examination of this nature is the opportunity afforded to discuss anxieties about a wide range of health problems.

A periodic health evaluation may save your life or that of a loved one. Organized and scheduled routine examinations and tests are the most effective way to safeguard the family's health. One can avoid a lot of diseases and illness by being proactive and having routine medical examinations and tests. If people are organized and know when to schedule regular physical examination and tests for their family, they will be more unlikely to catcha disease at an earlier stage. An early diagnosis means treatment can begin that much sooner, which usually means a more favorable outcome (Casey, 2013).

According to Krans (2012), physical examination helps the doctor determine the general status of the patient health. It also gives the chance to talk to them about pain and symptoms that they are experiencing, or any other health concerns they might have. A physical examination is recommended at least once a year, especially in people over the age of 50.

These examinations are used to:

- Check for possible disease, so that they can be treated early
- Identify any issues that may become medical concern in the future
- Update all necessary immunizations.
- Ensure maitenance of a healthy diet and exercise routine.
- Build a relationship with the doctor

These examinations are also good ways to check for high cholesterol, blood pressure, and blood sugar levels. Often, these levels will be high and you will not show any signs or symptoms. Regular screening allows the doctors to treat these conditions before they become severe (National Institutes of Health, 2011).

2.5 Knowledge of Periodic Health Evaluation

Knowledge of periodic health evaluation is a familiarity, awareness or understanding of someone on facts, information, description, or skills, which is acquired through experience or education by receiving, discovering or learning. It can refer to a theoretical or practical understanding of periodic health evaluation. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of periodic health evaluation); it can be more or less formal or systematic. In philosophy, the study of knowledge is called epistemology; the philosopher, Plato famously defined knowledge as "justified true belief" through "well-justified true belief". However, there are several definitions of knowledge and theories of periodic health evaluation to explain its existence. The acquisition of knowledge of periodic health evaluation involves complex cognitive processes such as perception, communication and reasoning (Stanly, 2002).

Also, a study conducted by Isara, Awunor, Erameh, Enuanwa and Enofe (2013) on knowledge and practice of cervical cancer screening among 230 female medical students of the university of Benin, Benin City, Nigeria indicated that a greater proportion (63.0%) had good knowledge of cervical cancer. Their major source of information was from medical personnel. 62.0% were aware of the risk factors associated with cervical cancer. Although, 70.0% have heard of pap smear, only 28.5% knew of its use, while 9.0% had done a pap smear in the past.

Knowledge, attitude and practice on cervical cancer screening among the medical workers of Mulago hospital, Uganda were studied by Mutyaba (2006) which indicated that 93.0% considered cancer of the cervix a public health problem and knowledge about pap smear was 83% among respondents. Less than 40% knew risk factors for cervical cancer, eligibility for and screening interval. Of the female respondents, 65% didn't feel susceptible to cervical cancer and 81% had never been screened. Of the male respondents, only 26% had partners who had ever been screened. Only 14% of the final year medical students felt skilled enough to use a vaginal speculum and 87% had never performed a pap smear.

Also a study by Oche, Kaoje, Gana and Ango (2013) revealed that almost all 217 (98.6%) of female health workers in Sokoto, Nigeria had ever heard of cervical cancer. About three quarters 165 (76%) heard of it from lecturers and seminars in schools. While most 44(20.3%) got information about it through public lectures. Of the 220 respondents, 188(85.5%) and 193 (87.7%) knew that cervical cancer is associated with HPV and multiple sexual partners, respectively. Majority 199 (90.5%) knew that the disease can be detected at the precancerous stage through periodic health evaluation (pap smear). A total of 217 (98.6%) of the respondents had good knowledge (≤50%) about cancer of the cervix and its associated risk factor while 199 (90.5%) knew that it can be detected by cytological screening. The mean knowledge score was 82.2 ± 13.8. a total of 176 (79.6%) respondents were aware of presence of cervical cancer screening service in the study center. A total of 191 (86.8%) respondents were of the opinion that cervical cancer screening is for all women of child bearing age, 15 (6.8%) believed that only women with symptoms suggestive of the disease should go for the screening test while 10 (4.5%) opined that only women who have had promiscuous lifestyle should undergo the test.

The findings of the research conducted by Eke et'al (2012) on perception and practice of periodic medical checkup by traders in southeast-Nigeria revealed that out of 323 (traders) respondents about 74.9% were aware of periodic health evaluation; all females and 67.9% of males. The commonest known type of health evaluation was general examination (60.7%), then blood pressure measurement (55.4%). About 63.5% feel everybody needs health evaluation. Most (85.5%) feel health evaluation can improve their work efficiency. Also, a study conducted by Musa and Akande (2012) on Periodic health evaluation of food vendors in secondary school in Ilorin, kwara state that one hundred and eighty five (185) food vendors were interviewed. Most of the vendors (56.8%) had no formal education, 25.9% had primary education while 17.3% had secondary education. About 39% of the overall vendors had attended one form of food hygiene training organized by local government or the state ministry of health.

Research conducted on level of awareness of genetic counseling and testing in lagos, Nigeria; its advocacy on the inheritance of sickle cell disease by Adeyemo, Omidiji and Shabi (2007) shows that forty (40) hospitals were visited for this study and thirty (30) hospitals responded; private hospitals (22), public hospitals (6) and teaching hospitals (2). Of the 150 respondents, (aged 16-45years), only 20.4% of the age group 16-24years have heard about genetic counseling and testing, 9.9% in age group 25-35years and none in age group 36-45 years. Ninety one respondents are of the opinion that genetic counseling could assist in the prevention of sickle cell disease among children, about 126 respondents were willing to be educated more on the causes and prevention of sickle cell disease. Sixty four (64%) of respondents received genetic counseling and testing in schools, 22% in hospitals, 8% from other sources such as the media and in churches (7%). The number of reported cases of sickle cell disease recorded in private, public and teaching hospitals were 14 and 57; 143 and 89. 272 and 57 for the periods of 1995-2000 and 2001-2005 respectively. This is partly due to lack of knowledge of couples at risk before marriage and coupled with lack of awareness about its causes and prevention.

Also, a study carried out by Gabriel and Mathew (2006) to evaluate the knowledge, attitude and practice of premarital counseling for sickle cell diseases among youth in Yaba, Nigeria discovered that the prevalence of SCD in this part of the world where this condition is common was largely due to ignorance of the people affected and poverty. The study target populations were unmarried youth and the mean age of the respondents of 23$\pm$ 0.25 (Mean + SEM). This study showed that 80% of the respondents have knowledge of SCD and SCD premarital counseling. This is quite expected as Yaba population is an urban area and not a rural area where the literacy rate is lower. This is in line with a study among students of the University of Lagos in 2007 which reported that 82% of the respondents were knowledgeable of SCD and genetic counseling and testing (screening). Religious bodies, hospitals and non-governmental organizations in Nigeria such as Sickle Cell Hope Alive Foundation (SCHAF), Sickle Cell Awareness Foundation (SCAF), Dabma Sickle Cell Foundation and Sickle

Cell Aid Foundation (SCAF) are some of the organizations helping raise the level of awareness of SCD in Nigeria.

Research conducted by Al-Maskari, El-Sadiq, Al-Kaabi, Afandi, Nagelkerke and Yeatts (2012) on knowledge, attitude and practice of diabetic patients in the United Arab Emirates revealed that, of the 575 DM patients, thirty one percent of patients had poor knowledge of diabetes. 10% admitted non-compliance with their medications, knowledge, practice and attitude scores were all statistically significantly positively, but rather weakly, associated, but none of these scores was significantly correlated with HbA_{1C}.According to study conducted by Michael, Clareann, Friday aand Usifo (2014) on knowledge, attitude and practice of Nigerian women towards breast self examination: A cross-sectional study; of the 1000 participants 866 had information on education and practice of BSE. A smaller proportion (31.8% (209) of the study participants with high school education and below practiced BSE compared with 62.3% (132) of those with education above high school. High level of education of BSE (odds ratio (OR) = 1.6, 95% confidence interval (Ci) 1.42-1.88.

2.6 Practice of Periodic Health Evaluation

According to Ericsson, Krampe and Tesch-Romer (1993), practice of periodic health evaluation is the act of repeating at intervals over and over or engaging in health screening activity again and again for the purpose of improving one's health, as in the phrase "practice makes perfect". It is a method of learning and acquiring experience. The word derives from the greek (praktike), femine of (praktikos), "fit for or concerned with action, practical" and that from the verb (prasso), to achieve, bring about effect, accomplish". Sessions of health screening performed for the purpose of improving one's health are called practice of periodic health evaluation.

According to the survey conducted by Corrado, Anthony and Bjornstad (2006) on cardiovascular pre-participation screening of young competitive athletes for prevention of sudden cardiac death, only 50% of 10025 runners had undergone preventive medical screening. Beginners and returnees to long-

distance running are significantly less likely to have themselves checked than performance-oriented athletes (42.0% vs 59.9%; $p<0.01$). Moreover, the survey revealed deficiencies in many sports medical tests.

Also, a study conducted by Isara, Awunor, Erameh, Enuanwa And Enofe (2013) on knowledge and practice of cervical cancer screening among 230 female medical students of the university of benin, benin city Nigeria indicated that majority of the respondents had poor practice of the screening programmes. Although, 70.0% have heard of pap smear, only 28.5% knew of its use, while 9.0% had done a pap smear in the past.

Knowledge, attitude and practice on cervical cancer screening among the medical workers of Mulago hospital, Uganda were studied by Mutyaba (2006) which indicated that 93.0% considered cancer of the cervix a public health problem and knowledge about pap smear was 83% among respondents. Less than 40% knew risk factors for cervical cancer, eligibility for and screening interval. Of the female respondents, 65% didn't feel susceptible to cervical cancer and 81% had never been screened. Of the male respondents, only 26% had partners who had ever been screened. Only 14% of the final year medical students felt skilled enough to use a vaginal speculum and 87% had never performed a pap smear.

The findings of the research conducted by Eke et'al (2012) on perception and practice of periodic medical checkup by traders in southeast-Nigeria revealed that majority (85.5%) feel health evaluation can improve their work efficiency. Only 29.4% of males and 39.4% of females practice periodic health evaluation. Age, gender and educational status were found not to affect practice of periodic health evaluation significantly.

Also, a study conducted by Musa and Akande (2012) on Periodic health evaluation of food vendors in secondary school in Ilorin, Kwara state that one hundred and eighty five (185) food vendors were interviewed. 182 (98.4%) were females 3 (1.6%) were males. Majority of the vendors (93.2%) were

within the age range of 20 to 49 years, 12 (6.5%) were 50years and above, while only 6 (3.2%) were teenagers (<20 years). Most of the vendors (56.8%) had no formal education, 25.9% had primary education while 17.3% had secondary education. About 39% of the overall vendors had attended one form of food hygiene training organized by local government or the state ministry of health. 141 (76.2%) respondents had medical test done before they were allowed to sell food in their respective schools while remaining 44 (23.8%) did not do it. The requests for medical test were often ordered by the teacher in-charge of school meal or principal or by school clinic staff. The test often done by these vendors include physical examination (89%). stool examination (63%), urine examination (43.9%) and blood test (30%). The frequency of periodic medical examination was rather low. Out of the 141 food vendors who had the initial medical examination done only 30 (21.3%) had ever gone for periodic health evaluation. The frequency of such re-examination was twice in a year in 3.3% of the respondents and yearly in (26.7%). However, none of the respondents had ever undergone post-convalescence health evaluation. Also, majority of the vendors, 142 (77.5%), did not report to the school clinic or notify the school authority when ill. Analysis of the subject's food vending experience in relation to whether they had health evaluation done showed that, the longer the length of the vendors vending experience, the more likely they would have had medical test done. A higher proportion (78%) of the respondents with over 4years experience had medical examination done then those with less than 2years experience (69%).

Diabetes Mellitus: prevalence among university staff in southern Nigeria and attitude routine glycemic/glucosuric checkup were studied by Omorogiuwa, Oaikhena, Okioya, Akubueze, Owobu, Enahoro, Okoduwa and Otoghile (2010) and revealed that; using the stratified random technique, a total of 600 staff comprising 300 senior staff and 300 junior staff were selected for the study. All the junior staff that were selected for the study completed the study, however, 26 out of the 300 senior staff declined FBS/RBS investigation, so only 274 senior staff completed the study of the total population studied, 22 (5.9%) subjects go for routine glycemic/glucosive checkup and they were

essentially those who were known diabetic. Research conducted by Al-Maskari, El-Sadiq, Al-Kaabi, Afandi, Nagelkerke and Yeatts (2012) on knowledge, attitude and practice of diabetic patients in the United Arab Emirates revealed that, of the 575 DM patients. Seventy two had negative attitude towards having the disease and 57% had HbA_{1C} level reflecting poor glycemic control. Only seventeen percent reported having adequate blood sugar control, while 10% admitted non-compliance with their medications, knowledge, practice and attitude scores were all statistically significantly positive.

According to study conducted by Michael, Clareann, Friday aand Usifo (2014) on knowledge, attitude and practice of Nigerian women towards breast self examination: A cross-sectional study; of the 1000 participants 866 had information on education and practice of BSE. A smaller proportion (31.8% (209) of the study participants with high school education and below practiced BSE compared with 62.3% (132) of those with education above high school. High level of education of BSE (odds ratio (OR) = 1.6, 95% confidence interval (Cr) 1.42-1.88.Azodo and Ezeka (2014) reported on their study on ocular health practice by 148 dented surgeons in Southern Nigeria, that more than half 82(55.4%) of them have undergone professional eye examination with a quarter 20(24.3%) of them having received it, in the last 6 months. A significant proportion of the respondents rated the ocular health as excellent/ good and do not regularly indulge in eye safety practices.

2.7 Factors Influencing Periodic Health Evaluation

Certain factors such as availability of facilities and equipment, intervals at which the periodic health evaluations are conducted and the outcomes of periodic health evaluation are observed to affect its knowledge and practice and will be discussed as follows:

Facilities and Equipment for Periodic health evaluation

According to Tawfik (2010), the following facilities and equipment must be available if really an authentic result of routine examination is required:

- ϖ General Medical Examination Room:
- A desk + examination chair + chair for the patient
- A regular examination table
- A partition
- A side light bulb
- An X-ray lantern
- A stethoscope
- A Sphygmomanometer, a blood pressure gauge (mercury)
- A thermometer (digital)
- Tongue depressor (disposable)
- Medical gloves (disposable)
- An otoscope (auriscope)
- Tuning fork
- A bin for medical waste (distinct)
- Hand wash basin
- A wash tub for hands antisepsis + antiseptic alcohol hand gel
- ϖ Gynaecological Examination Room (We don't require this for medical fitness):
- Gynaecological examination table
- Vaginal speculums
- Sterile medical gloves
- ϖ Eye examination room:
- Digital device for measuring vision acuity (digital)

- Funduscope
- Equipment for diagnosis of color blindness.
- Device to measure the intraocular pressure

ϖ Laboratory

The presence of a room for blood sample extraction (a minimum area of 3 x 4m) are equipped with the following:

A- Table and Chair for the patient

B- Tubes for collection of Samples of different types and sizes.

C- Alcohol swabs

D- A trash bin to collect medical waste

E- Basin

The laboratory should include the following units:

- Haematology unit
- Microbiology unit
- Parasitology unit

It is conditional that each of the previously motioned units to be isolated from the others in well ventilated place (the existence of appropriate size suction fans) and contains:

- Basin and a system of disposal of sample and waste.
- Medical refrigerator (capacity not less than 18 feet).
- Microscope (good quality)

In addition to the above, the haematology unit should have:

- 2 deep freezers

- 2 centrifuge systems
- 1 water bath
- Automatic cell count
- Rotary device (for CBC tube mixing)
- A good quality device for testing of HbsAg, HBV and HIV
- Incubator
- Autoclave
- Safety cabinet for the conservation of sputum samples of tuberculosis
- Oven
- Complete reagents for all the tests for routine medical examination.

ϖ X-ray room:

- The total areas utilized should be at least 25m2
- Walls, doors and windows, flooring if not in the ground floor and ceiling lined with lead to protect against leakage of radiation.
- The patients to be registered in the computer after matching the electronic finger print with that taken in the reception and registration unit.
- X-ray equipment

A – Digital X-Ray film and data to be recorded to the health centre computer system.

B- X-ray films of various sizes and with high quality and working validity

C- X-ray film cassettes of various sizes.

D- Large X-ray lantern

E- Double side lead lined walls to protect X-ray technician

F- Radiation protective gown

G- Protector of the reproductive system of men and another for protection of the ovaries of women.

H – Automatic film development system

I – Radiation detector.

- Medical reports unit

Area of not less than $12M^2$

The equipment:

A – A computer connected to the internal network of the facility

B- A scanner

C – The authority of entry to the site to report the data and the results of medical checkup tests of the patients.

= The presence of an appropriate mechanism to prevent the falsification of medical reports, of which a copy is handled to the patient.

= A computer program for saving the date of the patients who have been examined in the centre and were issued medical reports with a copy of the report have been issued and signed by the embassies and consulates (by the scanner).

- General services:

Including bathrooms and a kitchen occupying an area of at least $25m^2$.

Interval for Periodic Health Evaluation

According to Howstuffworks. (2014) the following examinations, measurements and lab. tests help identify treatable problems early. For many medical conditions, early treatment can help prevent more serious problems. If you have any ongoing health problems you will probably need to see your provider more often. In addition to seeing health care provider regularly, you should try to maintain your weight, at a comfortable, health level and do frequent physical activity or get regular exercise. The recommendations listed below are based on guidelines developed by the American Academy of Family Physicians and the U.S. Preventive Health Task Force. They are guideline for how often you should get routine checkups by your health providers:

- ϖ Men 18-39 years old:

Every year

- Dental examination

Every 2-3 years

- Blood pressure, height and weight measurement and brief physical

Every 5 years

- Cholesterol check
- Men 40-65 years old:

Every year

- Physical examination for cancer (Skin, Thyroid, Lymph Nodes, Prostate and Rectum).
- Dental examination

Every 1-2 years

- Height/weight measurements
- Blood pressure check
- Stool sample check for blood
- Vision and glaucoma check

Every 3-5years

- Cholesterol check
- Blood sugar check
- Sigmoidsocopy after age 50 for colon cancer

ϖ Men over 65years old:

Every year

- Height/weight measurements
- Physical examination for cancer (skin, thyroid, lymph nodes, prostate and rectum).
- Stool sample check for blood
- Blood count
- Blood sugar check
- Vision and glaucoma check
- Lab tests or routine sample

Every 3-5years

- Sigmioidoscopy for colon cancer
- Prostate specific antigen (PSA) is a blood test that can be helpful in detecting prostrate cancer. There is some controversy, however, about the value of the PSA test and whether it should be

done routinely for men over a certain age. Ask you health care provider whether he/she recommends a PSA in your specific situation.

Furthermore, the intervals for periodic health evaluation for women of different age group can be described as follows:

ϖ Women 18years and above:

- Blood pressure test – every 2 years
- Cervical cancer screening (pap test)- Every 3-5yeears
- Chlamydia test- every year
- Cholesterol test – regularly as your doctor or nurses recommends
- Diabetes screening: if your blood pressures is higher than 135/85mmHg or if you are taking medicine for high blood pressure.
- Gonorrhea test- if sexually active
- HIV test- At least once every pregnancy and if at increased risk for HIV.
- Syphihis test- if pregnant or at increased risk

ϖ Women 40 years and above

- Breast cancer screening (mammogram) every 2 years

ϖ Women 50years and above:

- Bone minerals density test (Oesteoporosis screening)

- At least once
  - Colorectal cancer screening (using fecal occult blood testing, sigmoidoscopy or colonos copy)
- Every 2 years

(Womenhealth.gov, 2014).

Outcomes of Periodic Health Evaluation

Screening in medicine is a strategy used in a population to identify an unrecognized disease in individuals without signs or symptoms. This can include individuals with pre-symptomatic or unrecognized symptomatic disease. As such, screening tests are somewhat unique in that they are performed on persons apparently in good health. The outcomes of periodic health evaluation may be positive or negative. The positive outcome is the identification of diseases in a community early, thus enabling earlier intervention and management in the hope to reduce mortality and suffering from diseases (Raffle and Muir, 2007).

Although general medical checks are popular, recent debate has focused on their unintended consequences (negative outcomes) including over diagnosis, which is the detection of diseases that (if left undetected) would not have affected the quality or quantity of an individual's life. Abnormal screening results can also lead to further investigations and accompanying risks; anxiety or psychological distress, lost income due to work absences, difficulties in securing insurance, and increased health care costs (Thomson and Tonelli, 2012). According to Raffle et.al (2007), although screening have been shown to benefit the person being screened; over diagnosis, misdiagnosis, creating a false sense of security, and unnecessary investigation and treatment of false positive result are some potential adverse effect of screening. For these reasons, a test used in a screening program, must have good sensitivity in addition to acceptable specificity. Like any medical test, the result may incorrectly show positive for those without diseases (false positive) or negative for people who have the condition (false negative). There may also be adverse effects of screening procedure e.g. stress and anxiety, discomfort radiation and chemical exposure (Wald, Hackshaw & Frost, 1999).

MedlinePlus (2014) also asserted that, some medical testing procedures have risks and even require general anesthesia, such as the mediastinoscopy. Other tests, such as the blood test or pap smear have little to no direct risk. Medical tests may also have indirect risks such as the stress of testing, and riskier tests may be required as follow-up for a (potentially) false positive test result. Occasionally, specimen may need to be taken a second time. For blood specimens, this will require a second visit to the hospital for a new heel prick. If you receive an abnormal test result it is possible that the period of time needed to confirm the diseases may take several months.

Despite its high efficacy, screening does have limits. For example, there exists a small chance that you do have a target disease that went undetected during the screening process. On the other hand screening may detect other rare diseases not targeted by the test (Government du Que'bec, 2014).

Normal and Abnormal Results

Gale Encyclopedia of Medicine (2008) explained that, normal results of a physical examination correspond to the healthy appearance and normal functioning of the body. For example, appropriate reflexes will be present, no suspicious lumps or lesions will be found and vital signs will be normal. While abnormal result includes any findings that indicated the presence of disorder, diseases or underlying condition. For example, the presence of lumps or lesions, fever, muscle weakness or lack of tone, poor reflex response, heart arrhythmia or swelling of lymph nodes will point to a possible health problem.

2.8 Types and Procedures of Tests for Periodic Health Evaluation

Before visiting the health care professional, the patient should write down important facts and dates about his or her own medical history, as well as those of the family members. He or she should have a list of all medications with their doses bring the actual bottles of medicine along. If there are specific concerns about anything, writing them down is a good idea. Before the physical examination begins, the bladder should be emptied and a routine specimen can be collected in a small container.

For some blood tests, the patient may be told a head of time not to eat or drink after midnight. The patient usually removes all clothing and puts on a loose- fitting hospital gown. An additional sheet is provided to keep the patient covered and comfortable during the examination and treated with respect throughout the examination. As the examination proceeds the examiner should explain what he or she is doing and share any relevant findings (Barbara, 1995).

Physical Examination Procedures

Every medical checkup starts with a medical history interview; the examiner will ask the general conditions, illness and operations (surgeries) you have ever lived or taken drugs. He also questioned your lifestyle such as whether you smoke, your diet, whether exercise regularly and others. He will also ask whether there are certain diseases that decrease in your family, such as diabetes mellitus, heart attack or cancer. Through physical examination and further diagnosis to determine the general health for example: measuring of blood pressure, heart rate (pulse), respiratory examination, skin, abdomen, neck, lymph nodes and nerve reflexes. In this way a doctor can find, for example, if there are signs of chronic obstructive pulmonary diseases (COPD) and hypertension. Examiner also need to measure height and weight to calculate body mass index body mass index above normal increases the risk of various diseases (Thomson and Tonelli, 2012).

Gale Encyclopedia of Medicine (2008) stated that, your doctor will refer you to get blood and urine tests routinely in the laboratory. Blood and urine tests, especially to identify possible metabolic disorders (e.g. diabetes mellitus) and renal diseases. To this end, physicians need to know the level of blood sugar and blood lipids (e.g. triglycerides and Cholesterol). To measure the level of fitness and health of your heart, your doctor may ask you to follow the inspection with the treadmill. During the final interview, the doctor discusses the results of health evaluation with you and the next steps. He will arrange your risk profile for cardiovascular disease and other diseases and provides suggestions for improving your health and fitness levels.

Further tests, such as ECG for heart diseases, need only be done if there is suspicion of diseases. When the level of your general health is good, the next health evaluation can be done two years later.

According to Centre for Health Protection (2008), a complete physical examination usually starts at the head and proceeds all the way to the toes. However, the exact procedure will vary according to the needs of the patient and the preferences of the examiner. An average examination takes about 30 minutes. The cost of the examination will depend on the charge for the professional time and tests that are done. First, the examiner will observe the patients appearance, general health and behavior a long with measuring height and weight. The vital signs including pulse, breathing rate, body temperature and blood pressure are recorded.

Barbara (1995) maintained that with the patient sitting up, the following systems are reviewed:

- Skin: The exposed areas of the skin are observed; the size and shape of any lesions are noted.
- Head: The hair, scalp, skull and face are examined.
- Eyes: The external structures can be observed using an ophthalmoscope (a lighted instrument) in a darkened room.
- Ears: The external structures are inspected. A lighted instrument called on otoscope may be used to inspect internal structures.
- Nose and sinuses: The external nose is examined. The nasal mucosa and internal structures can be observed with the use of a penlight and nasal speculum.
- Mouth and pharynx: The lips, gums, teeth, roof of the mouth, tongue and pharynx are inspected.
- Neck: The lymph nodes on both sides of the neck and the thyroid gland are palpated (examined by feeling with fingers)

- Back: The spine and muscle of the back are palpated and checked for tenderness. The upper back where the lungs are located is palpated on the right and left sides and stethoscope is used to listen for breath sounds.
- Breast and armpits: Women's breasts are inspected with the arms relaxed and their raised. In both men and women, lymph nodes in the armpits are felt with the examiners hands. While the patients still sitting, movement of joints in the hands, arms, shoulders, neck and jaw can be checked.

Then, while the patient is lying down on the examination tables, the examination includes:

- Breast: The breast are palpated and inspected for lumps
- Front or chest and lungs: The area is inspected with the fingers using palpation and percussion. A stethoscope is used to listen to the internal breath sound.

The head should be slightly raised for:

- Heart: A stethoscope is used to listen to the heart rate and rhythm. The blood vessels in the neck are observe and palpated.

The patient lies flat for:

- Abdomen: Light and deep palpation is used on the abdomen to feel the outlines of internal organs including the livers, spleen, kidneys and aorta, a large blood vessel.
- Rectum and anus: With the patient lying on the left side and outside areas are observed. An internal genital examination (using a finger) is usually done if the patient is over 40 years old. In men, the prostate gland is also palpated.
- Reproductive organs: The external sex organs are inspected and the area is examined for hernia. In men, the scrotum is palpated. In women, a pelvic examination is done using a speculum and a papamnicolaou test (pap test) may be taken.

- Legs: With the patient lying flat, the legs are inspected for swelling, and pulses in the knee, thigh and foot areas are found. The groin area is palpated for the presence of lymph nodes. The joints and muscles are observed.
- Musculoskeletal system: With the patient standing, the straightness of spines and alignment of the legs and feet is noted.
- Blood vessels: The presence of any abnormally enlarged veins (varicose), usually in the legs, is noted.

In addition to evaluating the patient's alertness and mental ability during the initial conversation, additional inspection of the nervous system may be indicated.

- Neurological screen: The patient's ability to take a few steps, hop and do deep knee bend is observed. The strength of the hand grip is felt. With the patient sitting down, the reflexes in the knees and feet can be tested with a small hammer. The sense of touch in the hands and feet can be evaluated by testing reaction to pain and vibration.
- Sometimes additional time is spent examining the 12 nerves in the head (cranial) that are connected directly to the brain. They control the sense of smell, strength of muscles in the head, reflexes in the eye, facial movement, gag reflex, and muscles in the jaw. General muscle tone and coordination and the reaction of the abdominal area of stimulants like pain, temperature and touch would also be evaluated (Al-Gwaiz & Babay, 2007).

Laboratory Tests for Periodic Health Evaluation

According to NHS choices (2013), blood tests can be used in number of ways such as helping to diagnose a condition, assessing the health of certain organs or screening for some genetic conditions as follow:

Full Blood Count (FBC)

During FBC, a small sample of blood will be taken from a vein in your arm. The amount of different types of blood cells in the sample will be measured. On its own, a FBC can't usually provide a definitive diagnosis of a condition, but it can provide important "clues" about possible problems with your health, such as:

Low haemoglobin: Indicates anaemia, which has a number of possible causes, including internal bleeding or a poor diet.

High haemoglobin: Which may be caused by underlying lung diseases or problems within the bone marrow.

A low white blood cell count: Which may be genetic and non significant but could also be caused by problems with your bone marrow, a viral infection or more rarely, cancer of the bone marrow.

A high white blood cell count: Which usually suggest you have an infection somewhere in your body or rarely could be a sign of leukemia.

A low platelet count: Which may be caused by a viral infection or an auto-immune condition (where the immune system attacks healthy tissues)

A high platelet count: Which may be caused by inflammatory conditions, infections or problems in the bone marrow.

Erythrocyte Sedimentation Rate (ESR)

The test works by measuring how long it takes for red blood cells to fall to the bottom of the test tube. The quicker they fall, the more likely it is that there are high levels of inflammation. An ESR is often used to aid diagnosis in conditions such as arthritis, endocardistis, crohn's disease, temporal arteristis, polymyalgia rheumatica etc. along with other tests, an ESR can be useful in confirming whether you have an infection in your body.

C-Reactive Protein (CRP) Test:

A C-reactive protein test is another blood test used to help diagnosis conditions that cause inflammation. CRP is produced by the liver and if there is a higher concentration of CRP then usually, there is inflammation in your body.

Coagulation test:

A coagulation test may be used to measure how fast you blood clots. This is used to check for bleeding disorders, such as haemophilia or von willebrand diseases.

International Normalized Ratio (INR) Test: Is used to monitor dose of anticoagulants such as Warfarin. During the test, a sample of blood is taken and a chemical is added to it. The chemical starts a chain of reactions that should make the blood in the sample clots (thicken). During the clotting process a protein in the blood (Prothrombin) turns into an enzyme called thrombin. The time that it takes the prothrombin to turn into thrombin is called the prothrombin time (pro-time or PT). This is measured in seconds. PT is compared with the PT of someone who is not taking warfarin, which gives your INR.

Electrolyte Test:

Electrolytes are minerals found in the body. They have several functions, including:

Help to move nutrients into cells (and waste products out of them).

Help to maintain a healthy water balance in your body.

Help to stabilize levels of acid and alkali in your body

There are three (3) main electrolytes that can be measured with an electrolyte test (Sodium, Potassium and Chloride).

Raised or lowered levels of any of these electrolytes can have various possible causes.

A raised sodium level (hypernatremia) could be the result of dehydration, uncontrolled diabetes or persistent diarrhea.

A low sodium level (hyponatremia) is usually caused by certain types of medication, such as diuretics. Rarely, it could be due to a condition such as diabetes insipidus.

A raised potassium level (Hyperkalemia) could be the result of kidney failure. Certain medications can raise potassium levels, for example ACE inhibitors, which are used to treat heart failure and high blood pressure.

A low potassium level (hypokalemia) could be the result of heavy sweating or persistent vomiting or diarrhea. It can also be caused by certain medications (Al-Gwaiz & Babay, 2007).

Gale Encyclopedia of Medicine also described other blood tests as follows:

Blood Glucose (Blood Sugar) Test:

Most people with diabetes will need regular blood glucose tests as reducing the glucose levels is an important part of the treatment of diabetes. This is because if the blood sugar level becomes too high, a range of serious complications, such as kidney disease or nerve damage may occur. Blood glucose test kits may be available to use at home. These only require a small “pin prick” of blood for testing. People with type 2 diabetes usually don’t need to check their sugar at home it will be tested every three to six months at your hospital. The test shows the average blood sugar level over the past three months. Some types of blood glucose test require you not to eat anything for several hours before the test. Your general practitioner or diabetes care team can tell you whether this is the case.

Thyroid Function Test:

If your general practitioner suspects you have an overactive or underactive thyroid, they will take a sample of your blood and test it for levels of thyroid-stimulating hormone (TSH) and thyroxine and triodothyronine (the Thyroid hormones) if you have lower or higher than average levels of these hormones, it could mean you have a thyroid condition, or are at risk of developing one in the future.

Enzyme Linked Immunosorbent Assay (ELISA) Test:

If you have a viral or a bacterial infection, such as HIV or you have developed an allergy, your antibodies in response to the infection or allergy. The ELISA test takes a small blood sample and checks to see if it contains the associated antibody. Blood tests are particularly useful when you are at risk of an extreme infection or when a rare allergen is suspected.

Blood Gases Test:

A blood gases sample is taken form an artery, usually at the wrist. It's likely to be painful and the test will always be carried out in hospital. A blood gases test is used to check two (2) things:

The balance of oxygen and carbondioxide in your blood.

The balance of acid and alkali in your blood (the PH balance)

An imbalance in either of these can be caused by:

Problems with your respiratory system

Problems with your metabolism (the chemical reactions that are used by the body to breakdown food into energy).

Respiratory cause of an imbalance could be pneumonia, chronic obstructive pulmonary disorder (COPD) and hyperventilation.

Metabolic cause of an imbalance could be diabetes, kidney failure and persistent vomiting.

Genetic Testing and Screening

Genetic testing involves extracting a sample of DNA from your blood, then searching the sample for the suspected genetic mutation. Genetic conditions that can be diagnosed in this way include:

Haemophilia: A condition that affects the bloods' ability to clot (Thicken).

Cystic fibrosis: A condition that causes a production of sticky mucus in the lungs.

Spinal muscular atrophy: A condition where there is muscle weakness and progressive loss of movement.

Sickle cell anaemia: A condition that causes a shortage of normal red blood cells.

Polycystic kidney diseases: A condition that causes cysts to develop inside the kidneys.

Genetic screening may be offered to people who are thought to be at risk of developing a genetic condition. For example, if your brother or sister developed a genetic condition in later life, such as Huntington's diseases, you may want to find out whether there is a risk that you could also develop the condition.

Chromosome Testing (Karotyping)

Chromosome testing involves taking a blood sample and examining one of the blood cells under a powerful microscope. This allows the person who is carrying out the test to examine the chromosomes directly. Chromosomes are coils of DNA found in every cell. By counting the

chromosomes (each cell should have 23 pairs) and by checking their shapes, it may be possible to detect genetic abnormalities.

Chromosome testing is often used

To test children who have physical or developmental problems that has no apparent cause.

For couples who have experienced repeated miscarriages (usually three or more in a row).

Blood typing

Blood typing is used before a blood transfusion and donating blood. This is because it is important that anyone who receives blood is given blood that matches their group. If you were given blood that did not match your blood group your immune system may attack the red blood cells, which could lead to potentially life-threatening complications. Blood typing is also used during pregnancy as there is a small risk that the unborn child may have a different blood group different from the mother. This could lead to the mother's immune system attacking the baby's red blood cells, known as rhesus disease. If testing reveals that, extra precautions can be taken to safeguard the health of your baby. For example, a blood transfusion can be given to the baby when it is still in the womb to increases the number of red blood cells.

Blood cholesterol test

Cholesterol is a fatty substance known as a lipid. It is mostly created by liver form the fatty foods in your diet and is vital for the normal functioning of the body. Having too many lipids in your blood (hyperlipidemia) can have a serious effect on your health because it increases your risk of having a heart attack or stroke. Blood cholesterol testing is usually recommended if you are at an increased risk of developing cardiovascular disease (CVD). A cardiovascular disease such as a stroke or heart attack, affects the normal flow of blood through the body.

Things that increase your risk of CVD include:

Being over 40 years old

Being obese

Being a smoker

Being male

Having high blood pressure (hypertension)

Blood cholesterol levels are measured with a simple blood test. Before having the test, you may be asked not to eat for 12 hours (which usually includes when you are asleep). This will ensure that all food is completely digested and won't affect the outcomes of the test.

Liver function test

When the liver is damaged, it releases enzymes into the blood and levels of proteins that the liver produces begin to drop. By measuring the levels of these enzymes and proteins, it is possible to build up a picture of how well the liver is functioning. This can help to diagnose certain liver conditions, including; hepatitis, cirrhosis and alcohol-related liver disease.

Blood culture

A blood culture involves taking a small sample of blood from a vein in your arm and from another part of your blood. Both samples are introduced to nutrients designed to encourages the growth of bacteria (a process known as culturing) if there are traces of bacteria in your blood, culturing should highlight this. Two blood samples are needed in case one is accidentally contaminated by the bacteria that live on your skin.

Amylase test

An amylase test is often used with another blood test, known as a lipase test, to help diagnose or monitor conditions that affect the pancreas. Your blood sample is tested for level of amylase and lipase. An increased level of both could lead to diagnosis of either acute or chronic pancreatitis.

Prostate specific antigen (PSA) test

Prostate specific antigen (PSA) is made by the prostate gland. Some of it will leak into your blood, and the amount depends on your age and the health of your prostate. A raised PSA level in your blood may show that you have a problem with your prostate, such as a urinary tract infection (UTI), an enlarged prostate, prostatitis and prostate cancer.

Stool culture

According to WebMD (2012), a stool culture is done to identify bacteria or viruses that may be causing an infection. Although more than 50 different kinds of bacteria normally live in the intestines, large number of abnormal bacteria, viruses, fungi or parasite can grow in the intensities and cause infection and diseases. For a stool culture, a stool sample is collected in a clean container and placed under conditions that allow bacteria or other organisms to grow. The types of infection are identified by noting the appearance of the growth, by performing chemical tests on the stool sample, and by looking at the sample under a microscope.

Urinalysis

A urinalysis (UA), also known as routine and microscopy (R &M), is an arry of tests performed on urine, and one of eth most common methods of medical diagnosis. The word is a portmanteau of the words urine and analysis. The target parameters that can be measured or quantified in urinalysis

include many substances and cell as well as other properties, such as specific gravity. A part of urinalysis can be performed by using urine test strips, in which the test results can be read as color change. Another method is light microscopy of urine samples. A urine test strip can quantify:

Leukocytes: With presence in the urine known as leukocyturia

Nitrite: With presence in the urine known as nitrituria

Protein: With presence in the urine known as proteinuria, albuminuria, or microalbuminuria.

Blood: With presence in the urine known as hematuria.

Specific gravity: The numbers and types of cells and/or materials such as urinary casts can yield great details of information and may suggest a specific diagnosis:

Hematuria: Associated with kidney stones infection tumors and other conditions.

Pyuria: Associated with urinary infection.

Eosinophihuria: Associated with allergic interstitial nephritis, atheroembolic disease.

Red blood cells casts: Associated with glomerulonephritis, vasculitis, or malignant hypertension.

White blood cell casts: Associate with acute interstitial nephritis, exudative glomerulonephritis, or servere pyelonephritis.

(Heme) granular casts: Associated with acute tabular necrosis.

Crystalluria: associated with acute nephropathy (or acute uric acid nephropathy, AUAN).

Calcium oxalatin: Associated with ethylene glycol.

Waxy casts: Associated with chronic renal disease. Other methods of urinalysis include:

Urine culture: A microbiological culture of urine samples, detecting bacteria, is indicated when a urinary tract infection is suspected.

Ictotest: This test is used to detect the destruction of old red blood cells in the urine.

Hemoglobin test: This test for hemolysis in the blood vessels, a rupture in the capillaries of the glomerulus, or hemorrhage in the urinary system, which cause hemoglobin to appear in the urine (Al-Gwaiz & Babay, 2007).

Sputum culture

Behera (2010) stated that, a sputum culture is a test to detect and identify bacteria or fungi that infect the lungs or breathing passages. Sputum is a thick fluid produced in the lungs and in the adjacent airways. A sample of sputum is placed in a sterile container and sent to the laboratory for testing. Sampling may be performed by sputum being expectorated (produced by coughing) induced (saline is sprayed in the lungs to induce sputum production) or taken via an endotracheal tube with a protected specimen brush (commonly used on patient on respirators) in an intensive care setting. For selected organisms such as cytomegalo virus or pneumocystic jiroveci in specific clinical settings (immuno compromised patients) a branchoalveolar lavage might be taken by an experience pneumologist (Webmed, 2012).

Skin snips

One of the most common skin disorder diagnostic techniques is the skin snip. It involves the removal of some skin from an inflamed area, placing the skin snip into saline to encourage microfilariae to leave the skin, and microscopic examination to determine microfilarial load. There are a few drawbacks to this method of detection. Only trained personnel can perform the procedure, so there are additional costs for training and the actual microfilaria examination is not sensitive enough to

detect an early-stage infection. Patients also find the invasiveness unpleasant and have concerns about the sterility of the surgical instruments (Thomas, Anderson and MacRae, 1993).

2.9 Summary

Periodic health evaluation is an examination of individual's current state of health, often carried out by professional health practitioners. The aim of periodic health evaluation is to help find, prevent or lessen the effect of health problems. It is like getting one's car serviced before it breaks down. It is better to avoid disease than to treat it. Although some checks can be uncomfortable but they provide one's general practitioner or specialist with an opportunity to look at your lifestyle, medical history and family history to find out if one is at risk. Regardless of one's age, gender and medical history, it is important to have periodic health evaluation done .Also, the interval for conducting it depends on these factors. The outcome could either be positive or negative.

Knowledge of periodic health evaluation is a familiarity, awareness or understanding of someone on facts, information, description, or skills, which is acquired through experience or education by receiving, discovering or learning. It can refer to a theoretical or practical understanding of periodic health evaluation. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of periodic health evaluation).The acquisition of knowledge of periodic health evaluation involves complex cognitive processes such as perception, communication and reasoning. Practice of periodic health evaluation is the act of repeating at intervals over and over or engaging in health screening activity again and again for the purpose of improving one's health Sessions of health screening performed for the purpose of improving one's health are called practice of periodic health evaluation. Generally, the level of awareness of periodic health evaluation among people of different educational status is high but their level of practice is poor.

Every medical checkup starts with a medical history interview; the examiner will ask for the general conditions, illness and operations (surgeries) one have ever lived or taken drugs. He also asks

questions on one's lifestyle such as whether one smokes, one's diet, whether one exercises regularly, among others. He will also ask whether there are certain diseases that are common in one's family, such as diabetes mellitus, heart attack, cancer. Through physical examination and further diagnosis to determine the general health for example: measuring of blood pressure, respiratory examination, nerve reflexes, height and weight to calculate body mass index body mass index above normal increases the risk of various diseases, blood and urine tests routinely in the laboratory. When the level of one's general health is good, the next health evaluation could be done two years later.

Certain factors such as availability of facilities and equipment, intervals at which the periodic health evaluations are conducted and the outcomes of periodic health evaluation do affect individuals' knowledge and practice of periodic health evaluation. Facilities and equipment such as general examination room, gynaecological examination room, eye examination room, laboratory, x-ray room, medical report unit and general services must be available if really an authentic result of routine examination is required. The interval at which periodic health evaluation is conducted depends on the age, sex and family history of an individual. Normal results of a physical examination correspond to the healthy appearance and normal functioning of the body. For example, appropriate reflexes will be present, no suspicious lumps or lesions will be found and vital signs will be normal. Abnormal result includes any findings that indicate the presence of disorder, diseases or underlying conditions. For example, the presence of lumps or lesions, fever, muscle weakness or lack of tone, poor reflex response, heart arrhythmia or swelling of lymph nodes will point to a possible health problem.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This study appraised periodic health evaluation among academic staff of tertiary institutions of Northwest -Nigeria. This chapter describes the research design, population, sample and sampling techniques, data collection instrument, validation of the instrument, reliability of the instrument, data collection procedure and data analysis.

3.1 Research Design

The descriptive design of survey method was adapted for this study. According to Pilot and Beck (2004), the purpose of descriptive design is to observe, describe and document aspects of situations as they naturally occur in a given population; thus, this design was found appropriate for the study, because it allowed the researcher to appraise knowledge and practice of the subjects.

3.2 Population of the Study

The Population of this study was made up of 38 tertiary institutions in Northwest Nigeria (15 Universities, 13 Colleges of Education and 10 Polytechnics) and their academic staff estimated to be 47,251 (Shu'ara, 2014).

3.3 Sample and Sampling Technique

The sample of this study was 384 participants. They were selected through proportionate sampling technique of equal distribution from each each selected tertiary institution as suggested by Singha (1996). Thereafter, simple random sampling technique was used to arrive at the 384 participants. The tertiary institutions in the northwest were stratified into three strata. These were university stratum, college of education stratum and polytechnic stratum. Simple random sampling technique was used to select three institutions from each stratum, for a total of nine (9) tertiary institutions. The sample selected from each institution was based proportional to population. Therefore, institutions with high enrolment had higher number of participants selected. The population of female academic staff in Northwest Nigeria was smaller than that of their male counterparts, hence had a smaller sample selected.

TABLE 3.3.1: LIST OF INSTIUTIONS, POPULATION AND SAMPLES SELECTED

S/No	Tertiary Institutions Selected.	Population.	Samples Selected.
	University Stratum		
1.	Bayero University, Kano	1,309	59
2.	Ahmadu Bello University, Zaria	1,781	81
3.	Federal University, Dutse	423	19
	Total	3,513	159
	College Of Education Stratum		
4.	Sa'adatu Rimi College Of Education, Kumbotso	690	31
5.	Federal College Of Education, Katsina	1,203	55

6.	Federal College Of Education, Kano	403	18
	Total	2,296	104
	Polytechnic Stratum		
7.	Kano State Polytechnic	952	43
8.	Kaduna Federal Polytechnic	1,300	59
9.	Federal Polytechnic Kaura Namoda	426	19
	Total	2,678	121
	Grand Total	8,487	384

3.4 Data Collection Instrument

To achieve the purpose of this study, a researcher developed questionnaire was used to find out the knowledge and practice of periodic health evaluation among academic staff of tertiary institutions of Northwest-Nigeria. The instrument was titled "Questionnaire on Knowledge and Practice of Periodic Health Evaluation (Q.K.P.P.H.E.)''

The questionnaire consisted of three (3) sections; Section A with seven (7) items which sought demographic information of the participants, Section B with fifteen (15) items which elicited information on knowledge of periodic health evaluation, Section C With fifteen (15) items which sought information on practice of periodic health evaluation. The responses were "YES" and "NO". YES was scored as 1 point while NO was scored as 2 points.

3.5 Validation of the Instrument

To ensure that the instrument measured what it was supposed to measure, face and content validity of the instrument was done by five (5) experts from the Department of Physical and Health Education of Bayero University, Kano. All necessary corrections and suggestions were incorporated in the final draft before administration.

3.6 Reliability of the Instrument

A pilot study was conducted using a sample of twenty (20) participants from A.T.B.U. Bauchi, Nigeria who were not from the study area after which a test-retest method was used to establish the reliability of the instrument. In test-retest reliability, the same measuring instrument was used for two separate administrations on the same population at different times. The higher the correlation between the two measurements, the higher the reliability of the instrument. After two weeks of the first administration, the same instrument was re-administered to the same participants. Results obtained from the first and second tests were subjected to statistical analysis of correlation (r) using Pearson Product Moment Correlation Coefficient (PPMC) and a coefficient of r=0.85 was obtained.

3.7 Data Collection Procedure

The researcher collected an introductory letter from the Head, Department of Physical and Health Education, Bayero University, Kano, to the registrar of each of the selected tertiary institution to seek permission to conduct the study. The researcher administered 384 questionnaires to the respondents (academic staff) with the help of nine (9) research assistants (academic staff and nurses working in the clinics). It took four (4) weeks in administering and retrieving the completed questionnaires. Only 355 questionnaires were returned because 29 participants were not found during retrieval.

3.8 Data Analysis

Data collected on the demographic information of the participants were organized and described using descriptive statistics of frequency counts and percentages. Chi-square was used to test all the formulated hypotheses. All tests were performed at 0.05 levels of significance using statistical package of social science (SPSS).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This study appraised the periodic health evaluation among academic staff of tertiary institutions of Northwest-Nigeria. Three hundred and eighty four (384) questionnaires were distributed out of which three hundred and fifty five (355) were returned duly completed and used for the data analysis.

4.1 Results

For the purpose of presenting the finding of this study, all the collected data were tabulated and presented under the following headings:

Table 4.1.1: Demographic Information of the Participants

Age of the Respondents	Frequency	Percentage
20-40 Years	130	36.6%
41 and Above	225	63.4%
Total	355	100
Sex of the Respondents		
Male	265	74.6%

Female	90	25.4%
Total	355	100
Types of Institution		
University	146	41%
College of Education	96	27%
Polytechnic	113	32%
Total	355	100

As shown in table 4.1.1, the total number of respondents between 20-40 years age range were 130 (36.6%) and 41 and above were 225(63.4%). This revealed that the age range between 41 and above had the higher number of the respondents than the 20-40 years. Based on the sex of the respondents, males constituted 265 (74.6%) while females were 90(25.4%). This indicated that males have higher number of the respondents than the females. According to the types of institution of the respondents, academic staff from Universities were 146 (41%), those from Colleges of Education were 96(27%) and those from Polytechnics were 113(32%). This revealed that Universities had the highest number of the respondents followed by Polytechnics and lastly Colleges of Education.

Major Hypothesis 1: Academic staff of tertiary institutions of Northwest-Nigeria do not have significant knowledge of periodic health evaluation.

Table 4.1.2: χ^2 Summary on the Academic Staff Knowledge of Periodic Health Evaluation

Variables	Knowledgeable	Not knowledgeable	Total	df	χ^2	Prob.
Knowledge						
F_O	284	71	355	1	127.800	.001
F_E	177.5	177.5				

χ^2 127.800, df 1 (P<0.05)

The information in table 4.1.2 above reveals that 284(80%) of the respondents were knowledgeable about periodic health evaluation and 71 (20%) were not knowledgeable. Statistical computation showed χ^2 value of 127.800 at df 1 (P<0.05). The result showed that academic staff of Northwest, Nigeria have significant knowledge of periodic health evaluation. Therefore, the null hypothesis is rejected on the account that academic staff have significant knowledge of periodic health evaluation.

Sub-hypothesis 1: Younger academic staff of tertiary institutions do not significantly differ from their older colleagues in their knowledge of periodic health evaluation.

Table 4.1.3: χ^2 Summary on the Academic Staff Knowledge of Periodic Health Evaluation Based on their Age.

Age	Knowledgeable	Not knowledgeable	Total	df	χ^2	Prob.
Younger						
Fo	82	48	130	1	7.233	.007
F_E	93.0	37.0				
Older						
Fo	172	53	225			
F_E	161.0	64.0				
Total			355			

χ^2 7.233, df 1(p□0.05)

Result in table 4.1.3 shows that 82(23.1%) of the respondents who were knowledgeable about periodic health evaluation and 48 (13.5%) of the respondents who were not knowledgeable were younger academic staff. While 172 (48.5%) who were knowledgeable and 53 (14.9%) who were not

knowledgeable were older academic staff. Statistical computation showed χ^2 value of 7.233 at df 1 (P<0.05) which revealed a significant difference between younger academic staff and their older colleagues in their knowledge of periodic health evaluation. This means that older academic staff of tertiary institutions are more knowledgeable about periodic health evaluation than their younger colleagues. Therefore, the null hypothesis which stated that younger academic staff of tertiary institutions do not significantly differ from their older colleagues in their knowledge of periodic health evaluation is hereby rejected on the account that significantly more older academic staff had knowledge of periodic health evaluation than their younger counterparts.

Sub hypothesis 2: Male academic staff of tertiary institutions do not significantly differ from their female colleagues in their knowledge of periodic health evaluation.

Table 4.1.4: χ^2 Summary on the Academic Staff Knowledge of Periodic Health Evaluation Based on their Gender.

Gender	Knowledgeable	Not knowledgeable	Total	df	χ^2	Prob.
Male						
F_O	215	50	265	1	.837	.360
F_E	212.0	53.0				
Female						
F_O	69	21	90			
F_E	72.0	18.0				
Total			355			

χ^2 .837, df 1 (P 0.05)

Information in table 4.1.4 reveals that 215 (60.6%) of male respondents were knowledgeable and 50 (14.1%) were not knowledgeable about periodic health evaluation. While 69 (19.4%) of female respondents were knowledgeable and 21 (5.9%) were not knowledgeable. Statistical computation showed χ^2 value of .837 at df 1 (P> 0.05). This indicated that there is no significant difference

between male academic staff and their female colleagues in their knowledge of periodic health evaluation. This means that male and female academic staff of Northwest Nigeria have similar levels of knowledge of periodic health evaluation. On this account, the null hypothesis which says male academic staff do not significantly differ from their female colleagues in their knowledge of periodic health evaluation is accepted since a significant difference does not exist between them.

Sub-hypothesis 3: Academic staff of tertiary institutions do not significantly differ in their knowledge of periodic health evaluation based on types of institution.

Table 4.1.5: χ^2 Summary on the Academic Staff Knowledge of Periodic Health Evaluation Based on Types of Institution.

Types of institution	Knowledgeable	Not knowledgeable	Total	df	χ^2	Prob.
University						
Fo	124	22	146	2	4 .038	.133
F_E	116.8	29.2				
College of Education						
Fo	72	24	96			
F_E	76.8	19.2				
Polytechnic						
Fo	88	25	113			
F_E	90.4	22.6				
Total			355			

χ^2 4.038 df 2 (P□0.05)

Result in table 4.1.5 reveals that 124 (34.9%) of respondents from Universities were knowledgeable and 22 (6.2%) were not knowledgeable about periodic health evaluation. For Colleges of Education 72(20.3%) were knowledgeable and 24 (6.8%) were not knowledgeable. While for Polytechnics 88

(24.8%) were knowledgeable and 25 (7.0%) were not knowledgeable. Statistical computation showed χ^2 value of 4.038 at df 2 (P>0.05) which indicated no significant difference in their knowledge of periodic health evaluation. This means that academic staff of Northwest Nigeria have similar levels of knowledge of periodic health evaluation regardless of types of their institution. Therefore, null hypothesis is accepted on the account that academic staff of tertiary institutions do not significantly differ in their knowledge of periodic health evaluation based on types of their institution.

Major hypothesis 2: Academic staff of tertiary institutions of Northwest-Nigeria do not significantly practice periodic health evaluation.

Table 4.1.6: χ^2 Summary on the Academic Staff Practice of Periodic Health Evaluation.

Variables	Practice	Not practice	Total	df	χ^2	Prob.
Practice						
F_O	80	275	355	1	107.113	.001
F_E	177.5	177.5				

$\chi^2$107.113, df 1 (P<0.05)

Table 4.1.6 above indicates that the respondents who practice periodic health evaluation were 80 (22.5%) and those that do not practice it were 275 (77.5%). The statistical computation revealed a χ^2 value of 107.113, df 1 and the probability of .001 (P< 0.05).Therefore, the null hypothesis is accepted based on the account that a significant number of academic staff of tertiary institution of Northwest Nigeria do not practice periodic health evaluation.

Sub-hypothesis 4: Younger academic staff of tertiary institutions do not significantly differ from their older colleagues in their practice of periodic health evaluation.

Table 4.1.7: χ^2 Summary on the Academic Staff Practice of Periodic Health Evaluation Based on their Age.

Age	Practice	Not practice	Total	df	χ^2	Prob.
Younger						
F_O	51	79	130	1	32.751	.001
F_E	29.3	100.7				
Older						
F_O	29	196	225			
F_E	50.7	174.3				
Total			355			

χ^2 32.751, df 1(P 0.05)

Table 4.1.7 above reveals 51 (14.4%) of the respondents who practice periodic health evaluation and 79 (22.2%) who do not practice it were younger academic staff, while 29(8.2%) who practice and 196 (55.2%) who do not practice were older colleagues. Statistical computation showed a χ^2 value of 32.751 at df of 1 ($P<0.05$). This indicated a significant difference in the academic staff practice of

periodic health evaluation based on their age. Therefore, null hypothesis is rejected on the account that a significantly higher proportion of younger academic staff practice periodic health evaluation.

Sub-hypothesis 5: Male academic staff of tertiary institutions do not significantly differ from their female colleagues in their practice of periodic health evaluation.

Table 4.1.8: χ^2 Summary on the Academic Staff Practice of Periodic Health Evaluation Based on their Gender.

Gender	Practice	Not practice	Total	df	χ^2	Prob.
Male						
F_O	48	216	264	1	11.181	.001
F_E	59.5	204.5				
Female						
F_O	32	59	91			
F_E	20.3	70.5				
Total			355			

χ^2 11.181, df 1($P< 0.05$)

The information in table 4.1.8 indicates that 48 (13.5%) who practiced periodic health evaluation and 216 (60.9%) who do not practice it were males. While 32 (9.0%) who practice and 59 (16.6%) who do not practice were female colleagues. Statistical computation revealed a χ^2 value of 11.181 at df 1 ($P<0.05$) which indicated a significant difference in the academic staff practice of periodic health

evaluation based on their gender. Therefore, on this account the null hypothesis is rejected since a significantly higher proportion of female academic staff practice periodic health evaluation.

Sub hypothesis 6: Academic staff of tertiary institutions do not significantly differ in their practice of periodic health evaluation based on type of institutions.

Table 4.1.9: χ^2 Summary on the Academic Staff Practice of Periodic Health Evaluation Based on Types of Institutions.

Types of institutions	Practice	Not practice	Total	df	χ^2	Prob.
University						
Fo	34	112	146	2	.164	.921
F_E	32.9	113.1				
College of Education						
Fo	22	74	96			
F_E	21.6	74.4				
Polytechnic						
Fo	24	89	113			
F_E	25.5	87.5				
Total			355			

χ^2 .164, df 2, (P 0.05)

Result on the table 4.1.9 shows that 34 (9.6%) of Universities' academic staff practice periodic health evaluation and 112 (31.5%) do not practice it. Respondents from Colleges of Education who practice were 22 (6.2%) and 74 (20.8%) do not practice. Also, respondents from Polytechnics who practice

were 24 (6.8%) and 89 (25.1%) do not practice. Statistical computation revealed a χ^2 value of .164 at df 2 (P> 0.05) which indicated no significant difference in the academic staff practice of periodic health evaluation based on types of their institutions. Therefore, the null hypothesis is accepted on the account that academic staff of tertiary institutions do not significantly differ in their practice of periodic health evaluation based on the types of their institutions.

4.2 Discussion

This study appraised the periodic health evaluation among academic staff of tertiary institutions of North West- Nigeria. The outcomes of the study revealed that academic staff of tertiary institutions have knowledge of periodic health evaluation(80%) with χ^2 value 127.800 and P<0.05.The reason for their knowledge may be linked to the fact that they are conscious of their health and the services are available at their disposal. Similarly, the finding is in line with research conducted by Gabriel and Mathew (2006) on knowledge, attitude and practice of premarital counseling for sickle cell disease (SCD) among youth. The finding revealed that 80% of the youth have knowledge of SCD. Furthermore, this finding is in line with Oche et'al. (2013) who reported in their study on knowledge of cervical cancer screening among female health workers, that 85.5% of female health workers in Sokoto have knowledge of cervical cancer screening. Also, this finding agrees with the study conducted by Mutyaba (2006) on knowledge, attitude and practice of cervical cancer screening among medical workers. The finding revealed that 83% of medical workers were knowledgeable about Pap smear screening. The finding is in line with study conducted by Eke et'al.(2012) on perception and practice of periodic medical checkup among traders. The result showed that out of 323 traders 74.9% have knowledge of periodic health evaluation and the commonest known types of health evaluation were general examination 60.7% and blood pressure measurement 55.4%. The finding of this study shows a significant difference between younger academic staff and their older colleagues in their knowledge of periodic health evaluation. The evidence indicated that the level of knowledge is higher among older academic staff (48.5%) compared with younger colleagues

(23.1%).This is because older staff have more experience because of degenerative changes that lead to many diseases and more household health care responsibilities. The finding is in line with the work of Corrado et'al.(2006) on cardiovascular pre-participation screening of competitive athletes for prevention of sudden cardiac death. Their findings revealed that beginners and returners (younger) to long distance running are less knowledgeable 42.0% on the importance of cardiovascular pre-participation screening than their older colleagues with 58.0%. This finding is also in line with the study conducted by Oche et'al (2013) who found out that older women are more knowledgeable on the importance of cervical cancer screening than their younger counterpart of child bearing age. This finding also strengthens the work of Musa and Akande (2012) who found out that majority of the vendors in Secondary schools (93.2%) were within the age range of 20 to 49 years (younger) while (6.8%) were 50 years and above (older) and have higher level of knowledge of periodic health evaluation.

The outcome of this study showed no significant difference between male and female academic staff in their knowledge of periodic health evaluation (x^2 value .837 and P> 0.05). This is because both male and female academic staff have the similar levels of education on periodic health evaluation. This finding is also supported by the study carried out by Mutyaba (2006) which indicated that 83% of the respondents (male and females) have knowledge of pap smear. Oche (2013) revealed that majority (90.5%) of health workers (males and females) in Sokoto, Nigeria knew that cervical cancer can be detected at the precancerous stage through periodic health evaluation (Pap smear). Moreover, this finding is supported by Adeyemo, Omidiji and Shabi (2007) which showed no difference between males and females in the awareness of genetic counseling and testing. This finding is in line with the research conducted by Eke et'al. (2012) on perception and practice of periodic medical checkup among traders which revealed that 74.9% comprising both male and female and female traders have knowledge of periodic health evaluation.

The finding of this study revealed no significant difference exists in the academic staff knowledge of periodic health evaluation based on the types of their institutions (χ^2 value 4.038 and P> 0.05).This may be due to the equal distribution of health facilities and similar levels of education may not allow significant difference to exist. This is in line with finding of Yusuf (2014) on the knowledge and utilization of HIV/AIDS vertical transmission preventive measures among infected pregnant mothers. It revealed that no difference exists in knowledge of infected pregnant mothers that are in urban and those living in rural areas (t=.602, df =198 and P>0.05). The implication of this study is that location is not a factor that determines knowledge of the participants. It also revealed a significant difference between formally and non-formally educated HIV/AIDS pregnant mothers in their knowledge of HIV/AIDS vertical transmission preventive measures.. The implication of this finding is that education is a factor for having no significant difference in the academic staff knowledge of periodic health evaluation regardless of types of their institutions. The finding also indicated no significant difference in the knowledge of infected pregnant mothers based on their senatorial zones which also indicated that knowledge is the same everywhere.

The finding of this study indicated that academic staff do not have significant practice of periodic health evaluation (22.5%).This may be associated with the fear of the outcomes of periodic health evaluation because of their level of education. This finding agrees with the work of Mbanga, Zebase, Kegne, Minkuolau and Awah (2001), who assessed knowledge and practice of nurses with regards to HIV/AIDS and revealed that 70.1% of the nurses who responded score highly in the knowledge section compared to 50% in the attitude and practice sections. This finding is also in line with the study conducted by Eke et'al (2012), which showed that the actual level of practice of periodic health evaluation among Nigerian traders was very low. It is supported with the finding Adamu et'al (2013), which revealed that the proportion of people with adequate practice of periodic health evaluation in Birnin-Kebbi, Northwest-Nigeria was very low. The finding is also in line with the survey conducted by Corrado, Anthony and Bjornstad (2006), on cardiovascular pre-participation screening of young

competitive athletes for prevention of sudden cardiac death, which revealed only 30% of 10025 runners had undergone preventive medical screening.

Another finding of this study indicated significant difference between younger academic staff and their older colleagues in their practice of periodic health evaluation. The evidence showed that the level of practice is higher among younger academic staff (14.4%) compared with their older colleagues (8.2%).This is because younger academic staff are healthier than their older colleagues and are at their peak and have more concern about their health status. Also, many diseases do not manifest at younger age and are difficult to diagnose, hence the need for regular checkups. This finding is supported with the study conducted by Musa and Akande (2012) which revealed that younger secondary schools food vendors practiced periodic health evaluation more than their older colleagues. This finding is does not support the study of Corrado et'al (2006) which revealed that beginners and returners to long-distance running (younger) are less likely to have themselves checked for sudden cardiac death than performance- oriented athletes(older). The outcome of this study further revealed that there is significant difference between male academic staff and their female colleagues in their practice of periodic health evaluation. The result indicated that female academic staff have higher level of practice (35.17%) than their male colleagues (18.18%). This is because female staff undergo periodic health evaluation at every pregnancy. This finding is supported by the research conducted by Isara et'al (2013) which revealed that female medical students practiced periodic health evaluation more than their male counterpart. This is also in line with the outcome of the work of Eke et'al (2012). The finding shows that only 29.4% of male traders practiced periodic medical checkup compared with 39.4% of females. This also indicated that females practiced periodic health evaluation more than males.

Furthermore, the finding of this study revealed that no significant difference exists in the academic staff practice of periodic health evaluation based on type of their institutions (x^2 value. 164 and P>0.05).This may be because academic staff have similar levels of education and lifestyles and are

provided with similar health services. This finding is in line with Yusuf(2014) study conducted on the knowledge and utilization of HIV/AIDS vertical transmission preventive measures among infected pregnant mothers in Bauchi State, Nigeria. The result indicated no significant difference exists in the practice of infected pregnant mothers that are in urban and those living in rural areas. The implication of this study is that location is not a factor that determines practice of the participants. Yusuf (2014) also revealed that formally educated HIV/AIDS infected mothers have similar levels of practice of preventive measures. The implication of this finding is that education is a factor for having no difference in the academic staff practice of periodic health evaluation regardless of type of their institutions. The finding also indicated no difference in the practice of HIV/AIDS infected mothers based on their senatorial zones which also indicated that practice is the same among educated people wherever they live.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Summary

This study appraised periodic health evaluation among academic staff of tertiary institutions of Northwest-Nigeria. To achieve the objectives of this study, two (2) research questions were raised and two (2) major hypotheses with six (6) sub-Hypotheses were formulated in line with the objectives and significance of the study. Descriptive design of survey research method was adapted for the study. The population of the study was made up of all academic staff of tertiary institutions of Northwest-Nigeria. The sample for the study was 384 participants selected through proportionate sampling technique of equal distribution and simple random sampling technique. Data were collected using self developed questionnaire shown in Appendix A. For the purpose of analysis, data from 355 participants only were duly completed, returned and used for analysis. Demographic information of the participants was organized and described using frequency counts and percentages. Chi-square (x^2) was used to test all the hypotheses at 0.05 levels of significance.

The findings revealed that:

- ϖ Academic staff of Northwest Nigeria have significant knowledge of periodic health evaluation.
- ϖ A significant difference exists between younger academic staff and their older colleagues in their knowledge of periodic health evaluation.
- ϖ No significant difference exists between male academic staff and their female colleagues in their knowledge of periodic health evaluation.
- ϖ No significant difference exists in the academic staff knowledge of periodic health evaluation based on types of their institutions.
- ϖ Academic staff of Northwest Nigeria do not significantly practice periodic health evaluation.
- ϖ A significant differences exists between younger academic staff and their older colleagues in their practice of periodic health evaluation
- ϖ A significant difference exists between male academic staff and their female colleagues in their practice of periodic health evaluation.
- ϖ No significant difference exits in the academic staff practice of periodic health evaluation based on types of their institutions.

5.1 Conclusions

Based on the findings of this study, the following conclusions were drawn:

- ϖ Academic staff of Northwest Nigeria have knowledge of periodic health evaluation.
- ϖ Older academic staff of Northwest Nigeria have higher level of knowledge of periodic health evaluation than their younger colleagues.
- ϖ Male and female academic staff of Northwest Nigeria have similar levels of knowledge of periodic health evaluation.
- ϖ Academic staff of Northwest Nigeria have similar levels of knowledge of periodic health evaluation regardless of types of their institutions.

- ϖ Academic staff of Northwest Nigeria practice periodic health evaluation.
- ϖ Younger academic staff of Northwest Nigeria have higher level of practice of periodic health evaluation than their older colleagues.
- ϖ Female academic staff of Northwest Nigeria have higher level of practice of periodic health evaluation than their male colleagues.
- ϖ Academic staff of Northwest Nigeria have similar levels of non-practice of periodic health evaluation regardless of types of their institutions.

5.2 Recommendations

Based on these findings, the following recommendations were drawn:

- ϖ Management of tertiary institutions in collaboration with NGOs and federal ministry of health should intensify campaign on the awareness of periodic health evaluation and be extended to the entire Nigerian community.
- ϖ Younger academic staff should be more encouraged to create and maintain more awareness on periodic health evaluation.
- ϖ Male and female academic staff should be encouraged to create and maintain more awareness on periodic health evaluation.
- ϖ The tertiary institutions' clinics of Northwest Nigeria should maintain the same levels of health education campaign on the awareness of periodic health evaluation through organizing seminars and workshops.
- ϖ Management of tertiary institutions in collaboration with NGOs and federal ministry of health should intensify campaign on the importance of practicing regular periodic health evaluation among academic staff.
- ϖ Older academic staff should be more encouraged on the importance of practicing periodic health evaluation.

- Male academic staff should be encouraged on the importance of practcing periodic health evaluation.
- Academic staff in all tertiary institutions of Northwest Nigeria should be encouraged to maintain good levels of practice of periodic health evaluation.

5.3 Recommendation for Further Studies

Similar studies should be conducted on appraisal of periodic health evaluation in other geopolitical zones of Nigeria.

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BAYERO UNIVERSITY, KANO, FACULTY OF EDUCATION

DEPARTMENT OF PHYSICAL AND HEALTH EDUCATION

QUESTIONNAIRE ON PERIODIC HEALTH EVALUATION

I am a M. Sc. student of the above named department, conducting a research on Appraisal of Periodic Health Evaluation among Academic Staff of Tertiary Institutions of Northwest Nigeria.

The questionnaire is aimed at assessing information on Knowledge and Practice of Periodic Health Evaluation among Tertiary Institutions' Academic Staff of Northwest Nigeria. Please respond appropriately, be assured that your kind responses would be treated confidentially and used for academic purpose only.

Thanks for your cooperation.

Adamu Abubakar Getso.

SECTION A : DEMOGRAPHIC INFORMATION OF THE RESPONDENTS.

) in the appropriate column.

(1) Age

20-25 year [ ]
26-above [ ]

(2) Sex

Male [ ]
Female [ ]

(3) Types of Institutions

University [ ]
College of education [ ]
Polytechnic [ ]

SECTION B: KNOWLEDGE OF PERIODIC HEALTH EVALUATION.

S/N	Items	Yes	No
1	I have information on availability of blood pressure apparatus at the school clinic.		
2	I am aware that scanning machines are provided at the school clinic.		
3	I have information on availability of weighing scales provided at the school clinic.		
4	I am aware that x-ray machines are provided at the clinic.		
5	I know that microscopes and reagents are provided for laboratory use at the clinic.		
6	Diabetes is detected through blood glucose test.		
7	Cardiovascular diseases are detected through blood cholesterol test and electro cardiogram.		
8	Breast cancer is detected through mammogram (breast scan).		
9	Sickle cells disease is detected through genotype test		
10	Infections are detected through blood stool microscopy and culture.		
11	Blood glucose test is done annually to detect diabetes.		
12	HIV/AIDS screening is done at two years interval or at every pregnancy in women.		
13	Blood cholesterol test and electrocardiogram are done at three to five years' interval to identify heart problems.		
14	Liver function test is done at three to five years interval to identify liver disease		
15	Mammogram is done at two years interval to detect cancer of the breast if there is no family history.		

SECTION C: PRACTICE OF THE PERIODIC HEALTH EVALUATION.

S/N	Items	Yes	No
1	I check my blood pressure at the school clinic.		
2	I do my abdominal scan at the school clinic.		
3	I check my weight at the school clinic.		
4	I do my x-ray at the school clinic.		
5	I do my blood tests at the school clinic.		
6	I check my blood glucose levels to detect diabetes through blood glucose test.		
7	I check my cholesterol levels to detect cardiovascular diseases through blood cholesterol test.		
8	I check for breast cancer through mammogram (breast scan).		
9	I check for sickle cells disease through genotype test.		
10	I check for infections through blood/stool microscopy and culture (blood and stool tests).		
11	I check my blood glucose levels every year.		
12	I screen for HIV/AIDS every two years/at every pregnancy.		
13	I check for cardiovascular disease every year		
14	I check for liver diseases every three to five year.		
15	I check for infections every year.		