

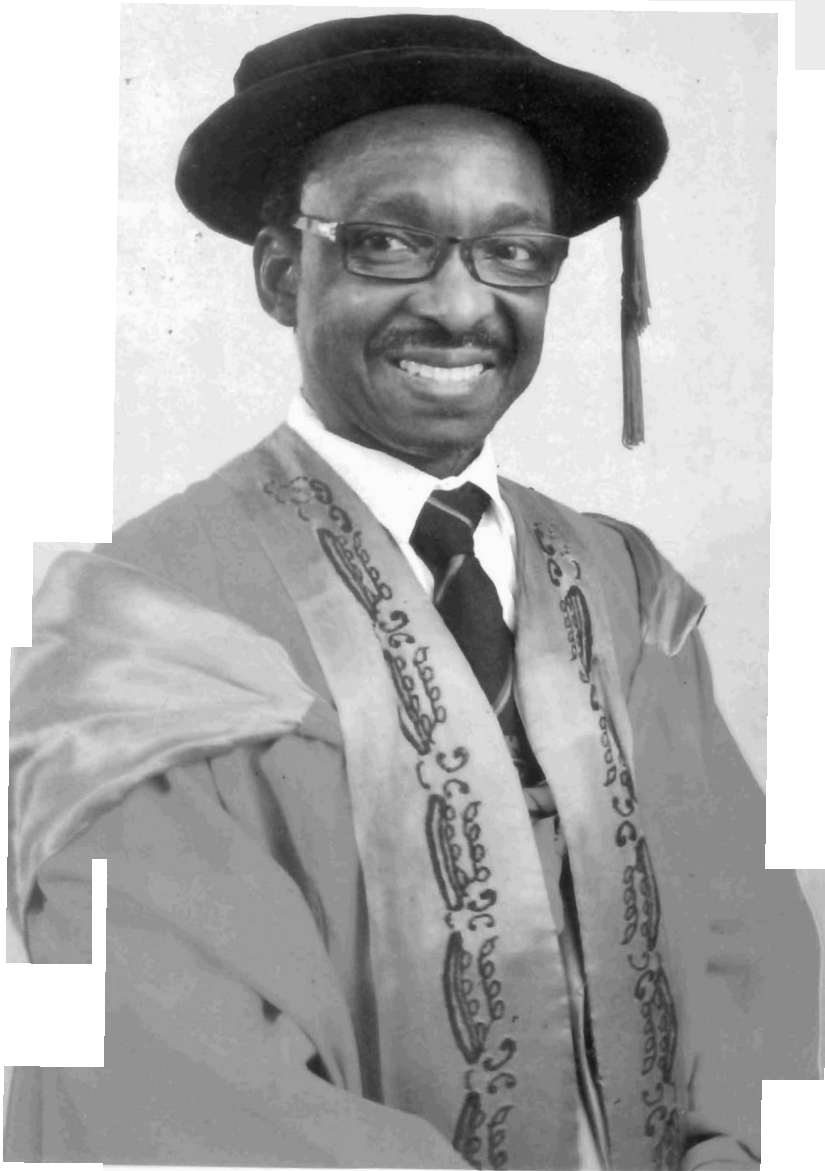
INAUGURAL LECTURE SERIES 291

POPULATION HEALTH AND FAMILY MEDICINE:

Reducing the Burden of Non- Communicable Diseases in Nigeria

By

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Professor of Family and Community Medicine



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**Reducing the Burden of Non-Communicable
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**An Inaugural Lecture Delivered at Oduduwa Hall
Obafemi Awolowo University, Ile-Ife, Nigeria
On Tuesday 20th September, 2016**

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1 Preamble

Mr Vice- Chancellor Sir, I give all Glory to the King of Kings for the privilege to stand before this august assembly to present the 291st inaugural lecture of the Obafemi Awolowo University, as the seventh lecturer from the Department of Community Health.

The scenery began in the first clinical year of medical school when I concluded that I needed broad competence to provide holistic care to the majority of people. The answers to those prayers came in my service year such that, I could commence training in Family Medicine. I acquired the skills and resources to establish a good general practice hospital only to receive a rare three-man delegation, a few months to launching out in 1986. This comprised the late Dr C. A Pearson, OBE, who had travelled a great distance, from Bury St Edmunds, Suffolk in England where he had retired as the first Director of Training of the Faculty of General Practice in the National Postgraduate Medical College of Nigeria. He requested that I assist him with his dream ambition of establishing the Family Medicine vocational training programme at the Wesley Guild Hospital, Ilesha. Two eminent Paediatricians in the persons of Professor G. A. Oyediji, our former College Provost and Dr. O. O. Olamijulo accompanied him. I consequently joined the Teaching Hospital with the plan to return to my own dream, once the training programme was established not knowing this was a detour and God had a different itinerary.

Astonishingly, within one year of joining the Hospital, I received several requests to join the University, a suggestion I resisted until Professor E. O. Ojofeitimi requested I submit an application, followed it through and physically finally brought me a letter of appointment, which I kept for several months until Professor G. O. A. Ladipo encouraged me to accept the appointment. I thank the Most High God for all these people and many others He placed on the pathway to this moment.

Mr. Vice-Chancellor Sir, permit me to pay my respects to Dr Andrew Pearson who did not stop at supervising my delivery at the Wesley Guild Hospital, Ilesha but became indeed my watching angel, Family Physician, trainer, mentor and friend.

2 Introduction

In view of the fact that Family Medicine may be said to be in its early childhood in Nigeria, this inaugural lecture affords me the opportunity to define my discipline, its unique features and its relationships within the wider context of the health professions and health care delivery in Nigeria, and propose a possible developmental pathway for the discipline and health care provision in Nigeria. At this point, I must quickly distinguish between Primary Health Care (PHC) and Primary Care before I proceed.

3 Primary Care

While the term PHC has been used by different people including health professionals to mean different things, PHC is actually a philosophy of care (guiding the provision and/or organisation of health care) that gained currency since the international conference organized by the WHO and UNICEF at Alma Ata in 1978.

Primary care on the other hand is defined as care “which provides integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs and developing a sustained partnership with patients¹. Primary Care is provided by clinicians trained and skilled in comprehensive first contact and continuing care in settings such as the office/clinic, home, day care, in-patient care, long term care and emergency care.

3.1 Primary Care Physicians

Primary Care Physicians are generalist physicians who provide definitive care for undifferentiated problems at the frontline of care and accept responsibility for providing continuing and comprehensive personalized care to their patients. They utilize other health professionals for consultation and referral when appropriate and coordinate all necessary health services for the individual to ensure cost effective appropriate health care. The primary care team may include community-based Paediatricians, Geriatricians and Generalist Internists

who are restricted to age segments of the population but the Family Physician remains the backbone of Primary Care.

4 Population Health

“Population health” is a term used frequently in healthcare and public health to mean different things depending on context and perspective. Population health is defined as “the health outcomes of a group of individuals, including the distribution of such outcomes within the group”². The population may be a geographic one or one defined by a particular characteristic. For Family Physicians, the primary population is the practice population. Population health also includes the overall health outcomes of the larger community or society. The social, economic, and physical environment of the larger community influence health and is thus equally important in providing comprehensive longitudinal care to individuals in the context of their families and communities – the primary task of the Family Physician.

The interrelated conditions and factors (spanning multiple sectors) that influence the health of populations over a life course include among other things individual health behaviours, capacity and coping skills; health services and health systems management; the social (education, employment, social support, culture), economic and physical environment (Figure 1). These determinants of health are the subject of the Ottawa Declaration for Health Promotion and the object of policies and interventions to improve population

health outcomes. Of note, is the fact that individuals and families constitute the essential pathway for many of these determinants, policies and interventions to achieving improvements in population health outcomes.

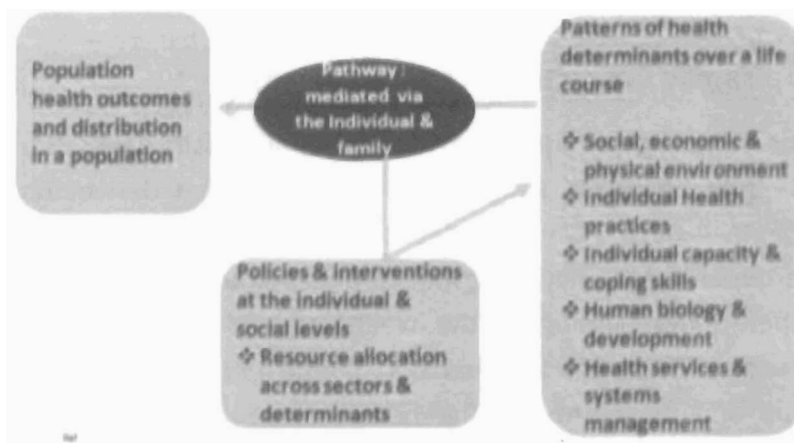


Figure 1: A Schematic Definition of the Field of Population Health. {Adapted from Kindlrig and Stoddart (2)}.

5 The Family as the Focus for Health Care

We are born into families. We develop and grow in the context of our families. The United Nations defines the family as members of a household who are related to a specified degree through blood, adoption or marriage while the National Institute of Mental Health defines the family as a network of mutual commitment³. These and other definitions of the family draw attention to family characteristics and the inherent natural potential for change with time that have very strong influences on the health of the group and its members.

The Family is the biosocial cell within which health behaviour, socialization patterns, psychological and emotional development, and relations with the wider society (that define the patterns of morbidity, illness behaviour and health service utilization) are determined.

5.1 Family Characteristics Affect Health

Understanding that individuals belong to a social system, the basic unit being the Family as a subsystem that derives its strength from the concepts of interrelationships, interdependence and interconnectedness is fundamental to a proper understanding of the wellbeing and health or the absence of these and the provision of appropriate care for the group and its members. The health of people is thus not simply a tissue, organ/organ system or even an individual matter.

Family characteristics, namely family composition (membership and structure), family process (interactions and transactions among members), patterned relationships (sequence of relationships that typify behaviours in the family - stereotypes), family affect (the nature of emotional expression among members) and family organization (roles, rules, expectations) influence both individual and group wellbeing/health.

5.2 The Elements of Change and Health

The Family as a system moves through time and changes with time. The family goes through various stages of development

from its formation to dissolution. The family life cycle, first described by Glick⁴, is an important framework that depicts the transition of the family through various stages of its development (Figure 2). It allows us to assess family health and functioning in a broader context with better understanding of family stresses, strengths and problems at the point in time. Transiting from one stage to the next poses problems as a result of imperative boundary and role changes for the new stage for example at marriage, childbirth, retirement or widowhood (predictable changes). Boundaries and roles are constantly redefined as the family goes through life necessitating adjustments and strategies for adaptation. Our individual life cycle (Family Life Spiral - Figure 3.) and overall health take shape as we move and evolve within the matrix of the family life cycle, which in turn is evolving within the larger socio-political culture.

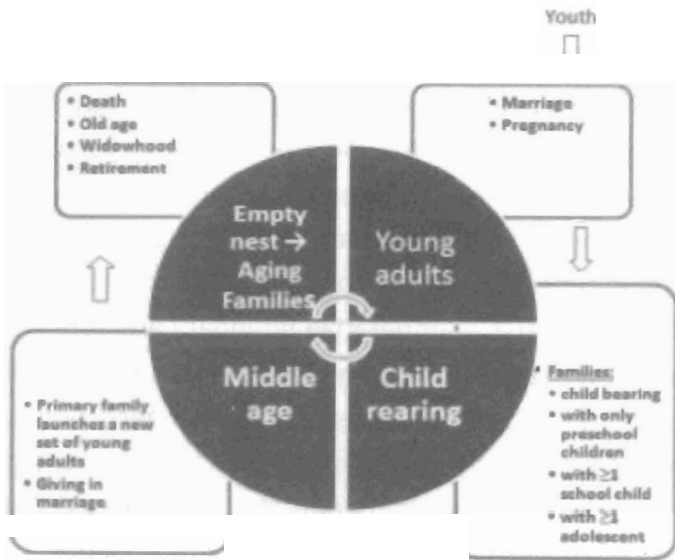


Figure: The Family Life Cycle

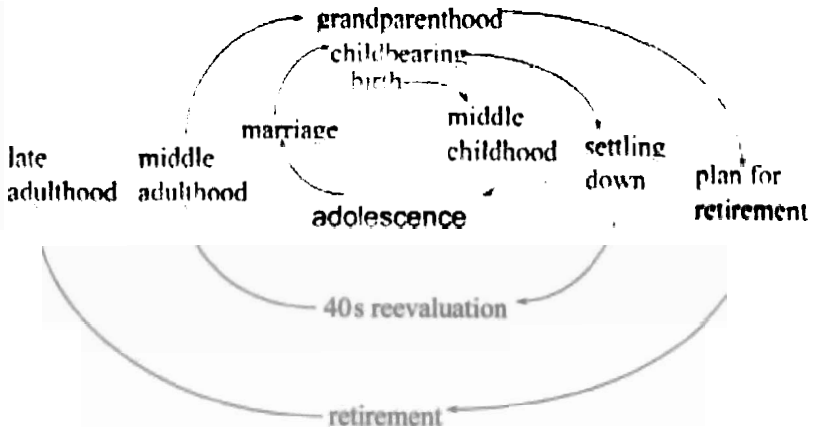


Figure 3: Family Life Spiral⁵

5.3 Family Support and Family Stress

5.3.1 Family Stress

Both individual family members and the family unit very often perceive and/or experience environmental events that may be stressful, and respond to these stressors in diverse ways. Both the perception or experience of and response to stressors affect family health. Predictable or normative family life events including joyous or planned events such as moving to a new house (among the five top most stressful situations) as well as unpredictable events commonly put the family under enormous stress. Oftentimes families have to make major adjustments precipitating transitional and non-transitional[†] crises. In addition, family relationships may be demanding, controlling, conflictive and as such stressful to members. While it is inevitable that every family will face stress together, the outcomes depend largely on family characteristics discussed above and in the next section of this lecture.

5.3.2 Family support

Health is strongly influenced by the social context, especially the type, volume, and richness of social relationships. Social relationships or the relative lack of these constitute a major risk factor for health rivalling the effects of well-established health risk factors such as cigarette smoking, high blood

[†] Non-transitional crises such as divorce, remarriage, severe illness in a member, premature death, loss of job or income, member kidnapping/abduction, unintended separation

pressure, abnormal blood lipids, obesity and physical inactivity^{4,6}.

The family is the most intimate social environment and most people seek and receive most of their social support from their families. Two key family characteristics, the nature of emotional expression among family members (family affect), and the interactions and transactions among family members (family process), largely contribute to the support people expect and receive from their families. This support consists of the family network that surrounds the individual (structural support) and the family goodwill (functional support – emotional, physical, material, informational and financial resources) placed at his/her disposal. Social isolation is strongly predictive of mortality while family support is protective⁴.

Family stress and support have enormous influence on health and mortality. Thus, understanding that family stress and support influence the health of family members is important in preventing and treating illnesses; caring for the family and its members; and improving the family's health potential and health outcomes (decreasing morbidity and mortality)

5.4 Family Influence on Health and Health Care Services

Most people live with other family members and are greatly influenced by family relationships. The family remains the most basic relational unit and the most intimate social

environment in our society. As such, the family has profound influence (its biological contribution inclusive) on the physical, mental, social and spiritual health of its members. The family is the primary source of health beliefs, health-related behaviours, stress and support. Family members influence each other, usually do similar things and eat similar diet ingesting similar amounts of salt, calories, cholesterol and saturated fats. There is also a tendency to assortative mating that is getting married to someone with the same traits, values, habits and behaviours.

Most cardiac risk behaviours including diet⁷, salt intake, smoking, alcohol use and inactivity are strongly influenced by the family. Health risk factors cluster in families as risk factor sharing occurs between spouses, parents and children⁸. Parent – child blood pressure, body build, body fat and cholesterol are significantly correlated^{9, 10}. Since health risk factors tend to run in families, the entire family requires intervention when an unhealthy behaviour is detected in an individual. Shared behaviours are difficult to change without such intervention and without the family embracing the intervention

Health appraisal and health care utilisation are strongly influenced by family characteristics, opinions, beliefs, health experience, “the family health expert”, spousal presence, family functioning and socioeconomic status. Families have clear patterns of health behaviours, health care utilisation inclusive. Family members usually share access to health care.

The family as the basic unit of human social organisation is the most readily accessible for preventive and therapeutic interventions. This informed the WHO's identification of the family as the primary social agent in the promotion of health and wellbeing¹¹.

5.5 Family Health and Family Roles in Health Care Provision

Family health is the extent to which the family provides the social environment for the natural development and fulfilment of all members, and the relative functioning of the structural unit in the promotion of health and wellbeing, preservation of health, and the potential to prevent ill health.

The family is the primary source of care for its members. This role is enormous in chronic illness. Frequently the presenting member is not the customer but another member of the family has demanded the care for reasons that border on shared responsibility, interest and concern. Another family member is often willing to help the health professional understand the problem, plan appropriate intervention and achieve treatment goals. At times, other members of the family may be part of the presenting problem or the patient has become a burden to other members.

6 Family Medicine/General Practice

6.1 The Origins of Family Medicine, FM

Although General Practice is as old as medicine, vocational training in Family Medicine started only in the early 1950 s in Europe and America but more recently (1981) in Nigeria. Whereas the WHO stressed the need for undergraduate postings in General Practice as far back as 1960¹², most medical schools around the world did not establish departments of Family Medicine until much later. The first department of General Practice established in Nigeria was in the University of Calabar in 1976.

6.2 The Discipline of Family Medicine

Family Medicine is the body of knowledge, attitudes and skills required to

- provide continuing and comprehensive health care that every member of the family requires regardless of age, sex or type of health condition be it biological, behavioural or social in the context of the family and community;
- take responsibility for the total health care of the individuals and their families from the first contact and initial assessment through the ongoing care of chronic health problems;
- perform early recognition, management and prevention of common health problems;

- coordinate and integrate all health services of the individuals and their families in a cost-effective manner.

6.2.1 Family Medicine Concepts

Family medicine recognizes

- I. the strong link between health and illness, personality, lifestyle, the physical environment and human relationships (social environment);
- II. the strong influence that human relationships have on the development of illness, the experience of illness and the outcome of illness;
- III. that illness in a family member has influence on other family members, family processes, relationships, family function and welfare;
- IV. the patient, his/her family and the physician are partners in health care and constitute **the therapeutic triangle**.

6.2.2 Critical Distinguishing Features of Family Medicine

A few things are unique about Family Medicine. These include:

1. interaction with clients both in health and illness -> Anticipatory Care, Health Promotion & Early disease recognition;
2. understanding the person whose health is managed and coordinated -> Appropriate Care;
3. initial care of undifferentiated illness;

4. comprehensive personalized holistic care -> Efficient Care;
5. interaction with clients longitudinally over long time periods -> Health Promotion;
6. knowledge of client's family and home settings -> Promotion & Prevention;
7. responsibility for continuity of care -> Efficient Care;
8. unrestricted access to continuing care -> Better Health-Seeking Behaviour, Early disease recognition & Satisfaction; and,
9. care for all individuals – sex, age, health condition regardless.

6.3 The Family Physician, FP

Family Physicians are physicians of first contact (Frontline Physicians) specifically trained and skilled in Family Medicine principles and techniques to provide health care to individuals, families and communities regardless of the presence of disease, the nature of the health condition (which may be social, psychological, mental or physical), age and sex.

This care is provided on a continuing basis in the context of the family and community in settings such as the office/clinic, health service/centre, hospital, home, outreach clinic, nursing home, aged care, other long stay homes, and the community.

Family Physicians (FP) recognize the need to understand and respect the client as a person and a member of a unique family. The FP manages the problem within the full context of

the person's life as a member of a family and community, the focus being a person living in a complex social setting (Figure 4) permitting the consideration of major causative or contributory factors and therapeutic interventional approaches. It is important to understand what the illness means to the person. After all, health, illness and disease are ultimately personal experiences and relief needs to be provided in a manner best suited to the individual.



Figure 4: Biopsychosocial Model of Wellness and Illness

6.3.1 Family Physicians and Home Care

“To understand a thing, we need to see it both in and out of its environment” – William James (1956). Nobody really enjoys going to the hospital. Most people especially children and the elderly find it stressful, inconvenient and sometimes scary. Hospital acquired infections, the unfamiliar and unfriendly environment of hospitals make hospitalization unsuitable for the elderly. Some patients who need

supervised care do not need to be in hospital and can be managed in their own homes or a nursing home. Integrated home care involving family physicians, home nursing, physiotherapy, occupational therapy, social workers and home help delivers improved patient satisfaction and health outcomes^{13, 14}. This is a well-defined institutional structure referred to in other places as the “Healthcare At Home”.

Home care is an important aspect of the services of Family Physicians, which presently receives little attention. Healthcare at home provides the care people need, in the place they most want to be. We all feel better at home than we are elsewhere.

7 Non-Communicable Diseases, NCDs

In 2012, 68% of all global deaths were from NCDs, 42% of which were premature or below the age of 70 years as shown in Figure 5. About 74 % of total and 82% of premature global NCD deaths were from Low/Medium Income Countries (LMIC) of which Nigeria is one. **The WHO has estimated that 80% of heart and cardiovascular disease, 90% of Type 2 diabetes and 30% of all cancers can be prevented merely by a change of eating habits, smoking cessation and increasing physical activity¹⁵.**

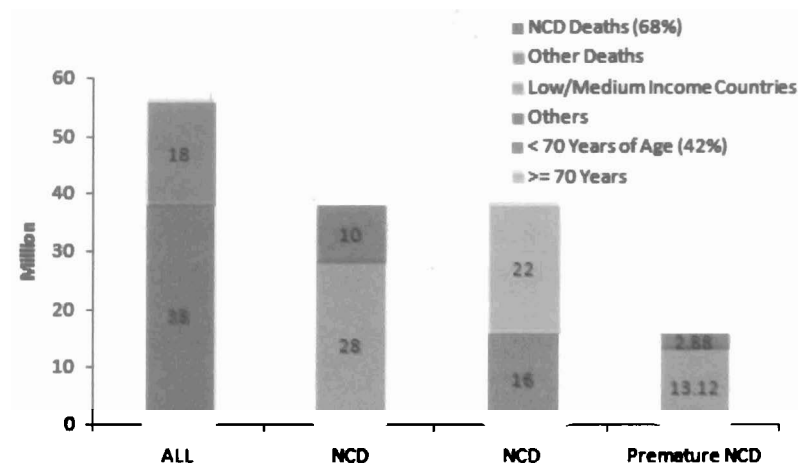


Figure 5: 2012 Global NCD and Other Deaths. {Source: Global Health Observatory (GHO) data}

Globally, cardiovascular diseases (CVD), chronic respiratory diseases, cancers and diabetes are collectively responsible for over 80% of NCD deaths (Figure 6).

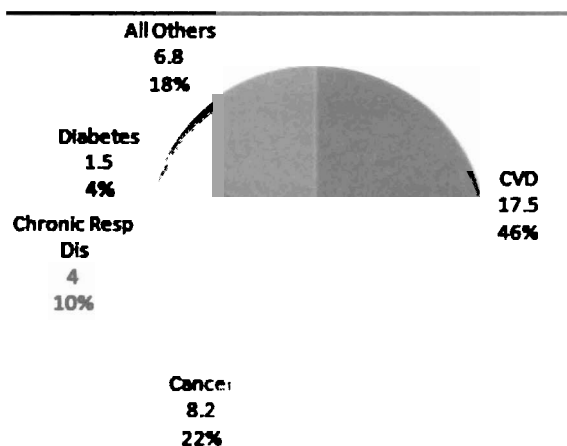


Figure 6: 2012 Global NCD Mortality (Millions) by Type {Source: Global Health Observatory (GHO) data}

Similarly, five cancers namely breast, liver, cervix, prostate and bowel cancers, are responsible for 65% or more of cancer cases globally (Figure 7) and the same applies to cancer deaths (Figure 8).

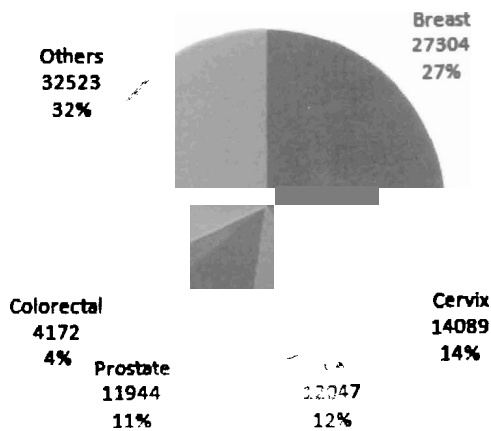


Figure 7: 2014 Global Cancer Incidence by Type {Source: Global Health Observatory (GHO) data}

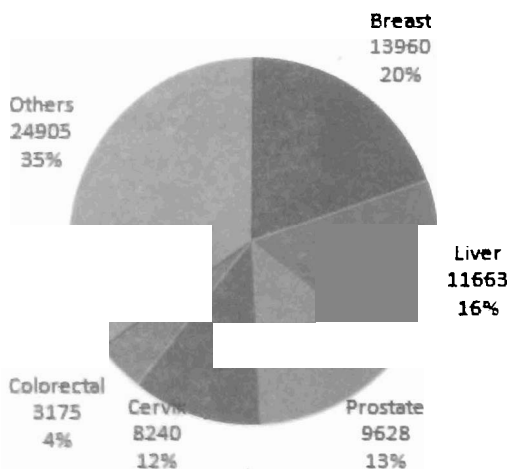


Figure 8: 2012 Global Cancer Mortality by Type {Source: Global Health Observatory (GHO) data}

7.1 NCD Risk Factors

The link between a healthy lifestyle and wellbeing as well as that between health-related behaviours, the prevalence of NCDs and premature death have been widely established¹⁶.

The four types of non-communicable diseases namely cardiovascular diseases (CVD), cancers, chronic respiratory diseases and diabetes that contribute the largest to morbidity and mortality due to NCDs share between them the four behavioural risk factors of unhealthy diet, physical inactivity or insufficient physical activity[†], tobacco use and harmful use of alcohol. The prevalence of the behavioural and metabolic

Physical inactivity is very little physical activity in all domains of daily living (global prevalence 11 - 24%);

Insufficient physical activity is < 2.5 hours' moderate activity or brisk walking/week

risk factors associated with NCDs in the world population is high as Figure 9 shows. The national NCD burden and risk factor prevalence closely follow global trends (Figure 10 and Figure 11).

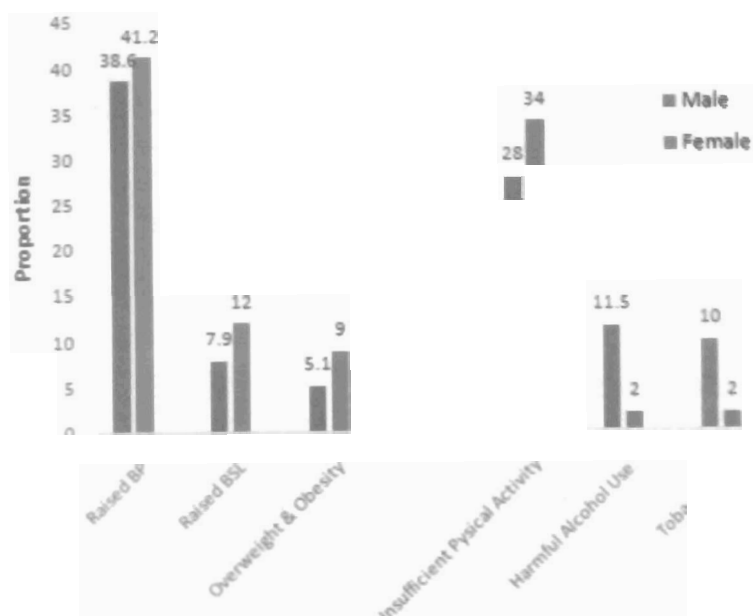


Figure 9: Global Prevalence of NCD Risk Factors {Source: Global Health Observatory (GHO) data}

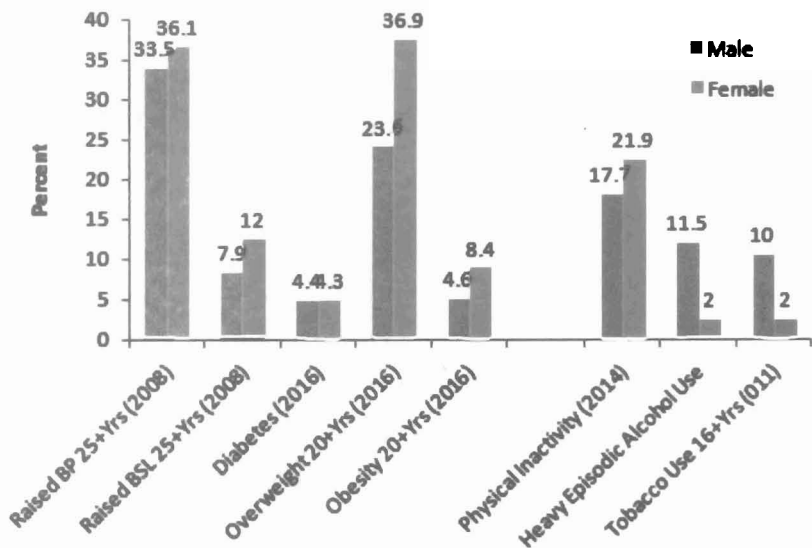


Figure 10: Nigeria NCD WHO Country Profile

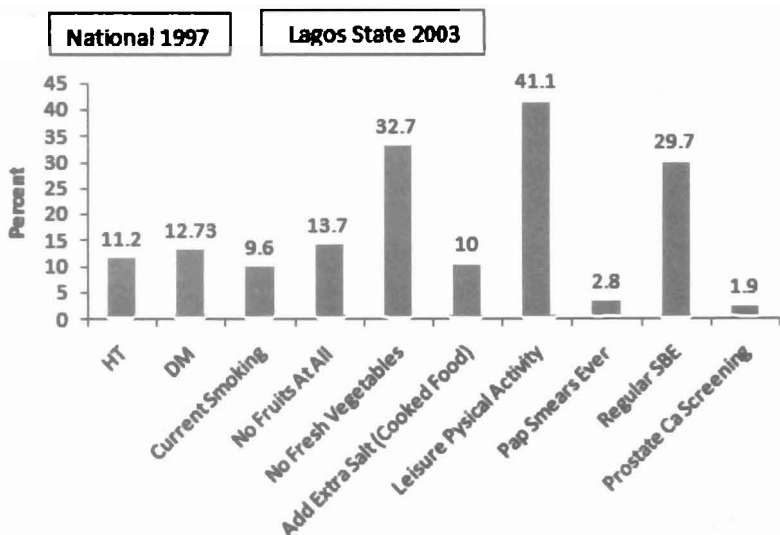


Figure 11: Non-communicable Diseases and Risk Factor Prevalence in Nigeria (Expert Committee on NCD Surveys^{17,18})

The 2012 GLOBOCAN annual cancer incidence estimates showed that the five commonest cancers in Nigeria were breast cancer (26.7%), cervix uteri cancer (13.8%), liver cancer (11.8%), prostate cancer (11.7%) and bowel cancer (6.0%) while the five top cancer deaths were from the breast (19.5%), liver (16.3%), prostate (13.5%), cervix uteri (11.5%) and bowel (9.1%)¹⁹.

7.2 Families and Chronic Illness

Most families face chronic illness in a family member during the life cycle. Whenever chronic disease occurs, the individual and the family will experience grief as they come to terms with the chronic loss of health, diminished expectations and living with the condition. There may be concerns about living long, other family members developing a similar condition, effects on lifestyle, social expectations, relationships, pregnancy and childbirth, career, opportunities and aspirations. The individual and family members may develop a sense of burden or guilt.

The long term and complex nature of the condition which requires long term care, the required lifestyle modification which is restrictive, the associated factors and the need for regular monitoring impact on the individual, other family members, and family resources (emotional, time, physical,

¹⁹Estimates derived from applying the simple average of rates from Ibadan, Calabar and Abuja Cancer Registry data to the national population: http://globocan.iarc.fr/Pages/fact_sheets_population.aspx

and financial). As a result, it is important to identify and involve another family member preferably living with the patient to provide encouragement, support behavioural change and remind the patient of the treatment details.

7.3 Family Medicine in NCD Control

7.3.1 Family Medicine Span of Care in NCD Prevention and Control

Values and behaviours are developed, maintained and changed within the family context. The Family Physician works with families in the practice to promote the development of healthy behaviours and the reduction of risk behaviours. The span of NCD prevention in Family Medicine is shown in Figure 12.

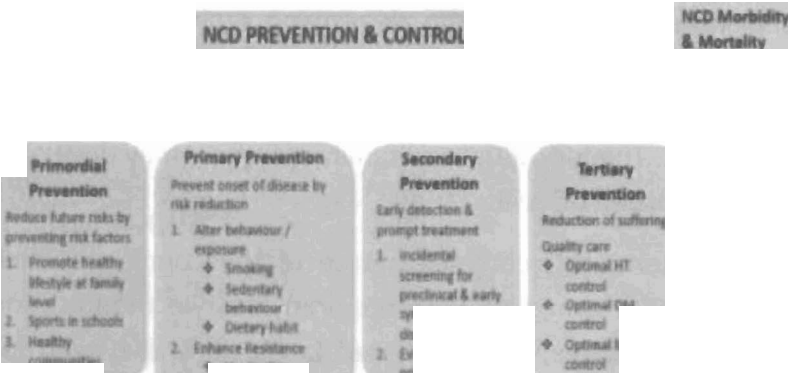


Figure 12: The Span of Care in Family Medicine

7.3.1.1 Primordial Prevention of NCDs

Health related behaviour patterns are laid down as we grow up from childhood in the family context. The Family Physician takes advantage of longitudinal care to promote the adoption of healthy family lifestyles (diet and physical activity, no smoking, non-harmful alcohol use) among families in the practice population in addition to advocacy on supportive policies and programs in the wider community in preventing the development of risk factors for disease at the primordial level.

7.3.1.2 Primary Prevention of NCDs

The clinical and cost effectiveness of reducing risk factors have been well documented^{20,21}. When individuals see the link between a healthy lifestyle (healthy eating and weight, exercise, avoidance of smoking, moderate alcohol consumption) and a healthy long life, they are willing to make sustainable changes to the way that they and their families live given the support they need to overcome the barriers. Family Physicians work with families for the prevention of diseases through risk reduction by altering behaviour and/ or disease agent exposure, and by enhancing resistance to the effect of exposure to disease agents in Primary Disease Prevention through brief intervention and vaccination.

7.3.1.2.1 Brief Intervention

In addition to intensive focused health education on the NCDs and their risk factors, the Family Physician employs the brief intervention strategy. This strategy is cost effective in helping patients modify health risk behaviours (smoking, physical

inactivity, unhealthy diet, risky alcohol use), improve self-management of chronic conditions and achieve improvements in health outcomes^{22 - 31}. This includes screening for smoking, unhealthy eating, excessive weight, harmful use of alcohol, physical inactivity and high blood pressure (Table 1).

Table 1: Guideline for NCD Prevention Activities in Family Medicine

Risk Factor	Target Group	Frequency
Smoking Status	All patients 10+ years	At every consultation
Nutrition No of Fruit & Vegetable portions/day Types of fat eaten	All patients	Every 2 years
Body Build BMI Waist Circumference/WHR	All who appear overweight	Every 2 years
Alcohol Quantity & Frequency	All patients 15+ years	Every 3-4 years
Physical Activity Current level & Frequency	All patients	Every 2 years
Absolute Cardiovascular Risk Assessment^{*,#}	All patients 45 - 74 years	Every 2 years at least

Source: Recommendations of the RACGP Guidelines for Preventive Activities in General Practice

*An index derived from patient's age, sex, smoking status, total and HDL cholesterol, systolic blood pressure (SBP) and if the patient is known to have diabetes (age <60, no micro-albuminuria) or left ventricular hypertrophy (LVH).

For clients with no Cardiovascular disease or clinically determined high CVS risk

Brief Intervention using the 'Ask, Assess, Advice, Assist and Arrange' (5As) approach has been found to be an effective clinical strategy in many health conditions to facilitate healthy lifestyle changes. It takes advantage of the multiple visits of clients to the FP to identify people with high risk health-related behaviours and provide them support at their stages of change towards making lifestyle behaviour changes for healthy eating, smoking cessation, cessation of harmful use of alcohol, weight management and regular physical activity.

7.3.1.2.2 Vaccine – Preventable cancers

Hepatitis B and C virus infections are the major causes of Primary Liver Cancer. The human papilloma virus (HPV) infection is responsible for up to 99% of cervical cancer. Potent vaccines are available for Hepatitis B (HBV) and the HPV infections. Hepatitis B vaccination is now part of routine primary childhood vaccinations. However, most adults and most girls are not vaccinated against HBV and HPV infections respectively. Effective mobilization for and the uptake of vaccination against these infections by eligible persons are the key strategies to liver and cervical cancer reduction. This service is one of the preventive activities in Family Medicine taking advantage of population-wide access to Family Medicine services.

7.3.1.3 Secondary Prevention - Health Screening and Early Detection of NCDs

An important distinguishing feature of the specialty of Family Medicine is the detection of diseases in their pre- and early symptomatic phases through health screening and improved access to care at the frontline in Secondary Disease Prevention. An early detection of NCD risk factors and chronic diseases is only possible through incidental health screening taking advantage of the clients' visits to the FP often for acute health problems, and through a periodic "Well Persons' Health Check". These health maintenance actions of the Family Physician are planned periodic (annual, biannual or at longer intervals) interventions for specified conditions. These actions include taking a screening history (health behaviour and family history), performing a screening physical examination (BP, Weight/Height, Clinical breast examination), and performing screening ancillary investigations (mammogram, cholesterol, pap smears, faecal occult blood).

7.3.1.3.1 Early Detection of NCDs

Early detection of NCDs reduces suffering, prevents complications and improves prognosis even with cancers most of which are curable if detected early. Screening, and enhanced access that facilitates help-seeking behaviour constitute the key strategic tools for early detection of cervical, breast, bowel and prostate cancers, hypertension, diabetes, excessive weight and abnormal cholesterol. (Table 2).

Table 2: Guideline for Screening for NCDs in Family Medicine

Chronic Condition	Target Group	Screening Method	Frequency
Cervical Cancer	Reproductive Age Females	Pap Smears	3 yearly
Breast Cancer	All Females 18+ All Females 50-70	Clinical breast Examination Mammogram	Yearly Every 2 years
Bowel Cancer	All patients 50+ years	Faecal Occult Blood Endoscopy	Every 2 years Every 5 years
Prostate Cancer	Men with suggestive features	Prostate Specific Antigen	Subject to clinical judgement
Hypertension	All patients 15+ years	BP measurement	Every 2 years; 6-12 monthly if increased risk
Type 2 Diabetes	All patients 40+ years	Fasting Blood Sugar	Every 3 years
Abnormal Blood Lipids	All patients 45+ years	Fasting Blood lipids	Every 5 years; 1-2 yearly if increased risk
Over Weight & Obesity	All patients 15+ years	BMI determination	Every 2 years

Source: Adapted from the RACGP Guidelines for Preventive Activities in General Practice

7.3.1.4 Tertiary Prevention of NCDs

Most patients with chronic diseases are managed in the frontline of care. The initial and continuing care of patients as well as the organization and coordination of all the health services they need especially in chronic illness is the thrust of

Family Medicine. The role of specialists in providing guidance in the management of complex or complicated chronic disease is well recognized and important for optimal care but this should only be in the context of shared care as most people with chronic diseases have more than one condition³² and need preventive care often for unrelated conditions³³. The need for prolonged continuing on-going care makes it necessary that the FP remains the primary, central and coordinating physician as the patient is best served by a responsive, person-centred effective system of care for enhanced health outcomes. Family Medicine is thus the bridge between Specialist care and Population Health.

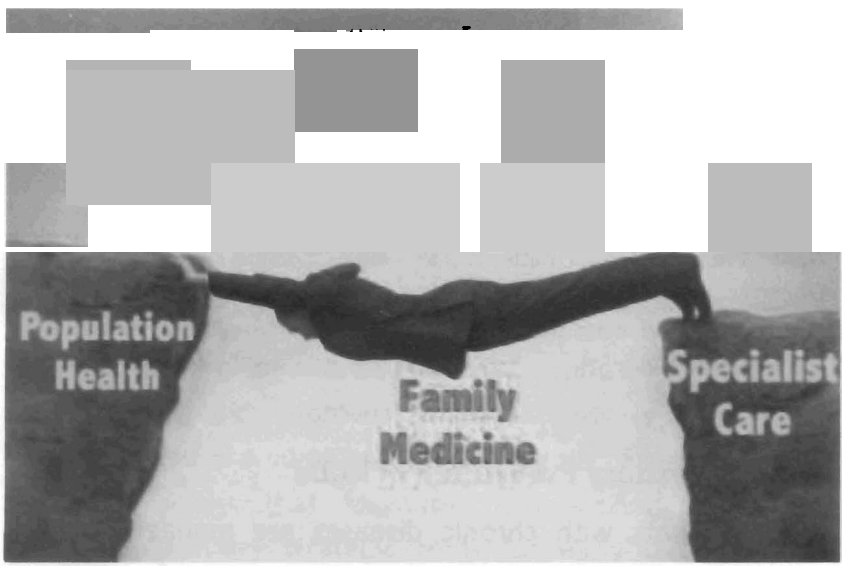


Figure 13: Family Medicine – The Bridge between Specialist Care and Population Health.

8 My Stewardship

Mr. Vice Chancellor Sir, I here present my stewardship in four main areas.

8.1 Contribution to Knowledge

Since joining the University, working collaboratively with my colleagues I have intensified research in noncommunicable diseases and the associated risk factors to provide the evidence and need for action. I present here the findings of research with my colleagues on the four major NCDs and the risk factors acting in concert as the drivers of NCDs in the population.

In 2011, we assessed the local prevalence of NCD risk factors in our Family Medicine clients at the Wesley Guild Hospital, Ilesa. Our findings showed that overweight/obesity (using waist - hip ratio), physical inactivity, high calorie and low fibre food intake were present in more than half of the subjects (Figure 14). In the context of a high prevalence of abdominal obesity (a major NCD risk), abnormal fasting blood sugar and high blood pressure were present in just less than half of subjects³⁴. About 8% (38) of the study subjects were diabetic.

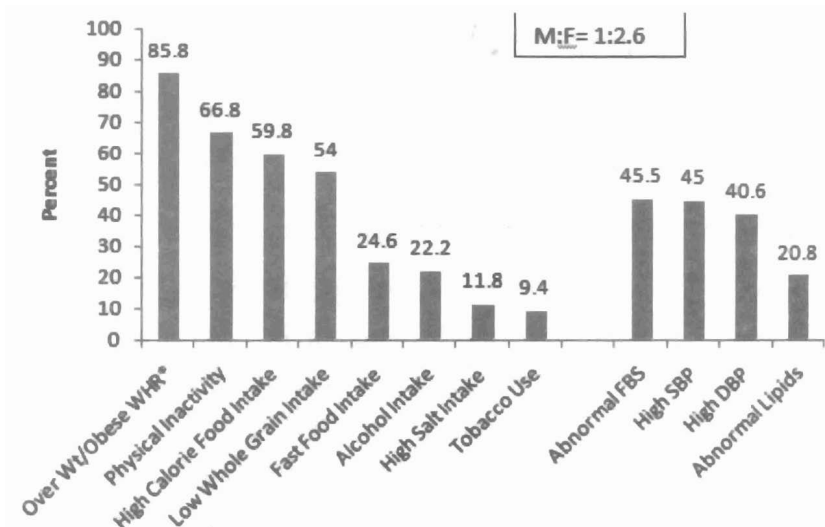


Figure 14: NCD Risk Factors among Family Medicine Clients at Wesley Guild Hospital, Ilesa

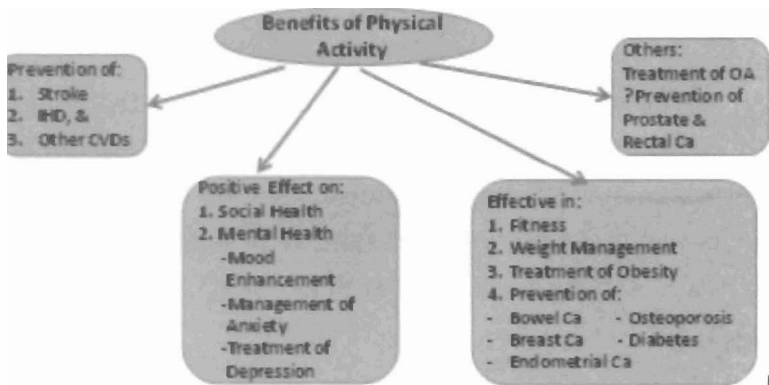


Figure 15. Benefits of Physical Exercise

8.1.1 Physical Inactivity

The health benefits of physical activity, PA, have been firmly established^{35, 36}. These benefits include prevention and management of many NCDs as shown in Figure 15³⁶⁻⁴². Thirty minutes of moderate intensity PA on five or more days of the week or equivalent[†] is the minimum public health physical activity recommendation to maintain and improve health. The evidence was based on the estimates of risk (reduction) from Leisure Time Physical Activity (LTPA) measures from epidemiological studies⁴³. Physical activity below this level is termed insufficient and classified as physical inactivity. However, it is recognized that **all forms of physical activity contribute to favourable health outcomes**⁴⁴ hence total physical activity in all settings and domains of activity comprising leisure or recreational, paid or unpaid work and transportation activities accrue for health improvement. A higher than minimally sufficient PA has been shown to provide greater health benefits⁴³. A minimum total PA of one

[†]**Minimum** public health physical activity recommendations classified as sufficiently active to maintain and improve health is three or more days of vigorous activity of at least 20 minutes per day, five or more days of moderate-intensity activity or walking of at least 30 minutes per day or five or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-min per week.

hour of normal activity of daily living, and an additional 0.5 – 1 hour of LTPA per day makes a healthy lifestyle amount of total PA which is defined as Health Enhancing Physical Activity (HEPA)⁴⁵.

My studies on physical activity in collaboration with my colleagues have revealed a high prevalence of overall physical **inactivity** especially among Family Medicine clients and similarly a high prevalence of inactivity in the LTPA domain among in-school adolescents as shown in Figure 16^{34, 46 - 48}. At the international Institute of Tropical Agriculture, Ibadan where the majority of respondents were field staff, 61.5% of management staff had sedentary jobs and majority of this group did not engage in LTPA thus constituting a physical inactivity at risk group as shown in Figure 17 due to lack of time (55.5%) and interest (20.3%)

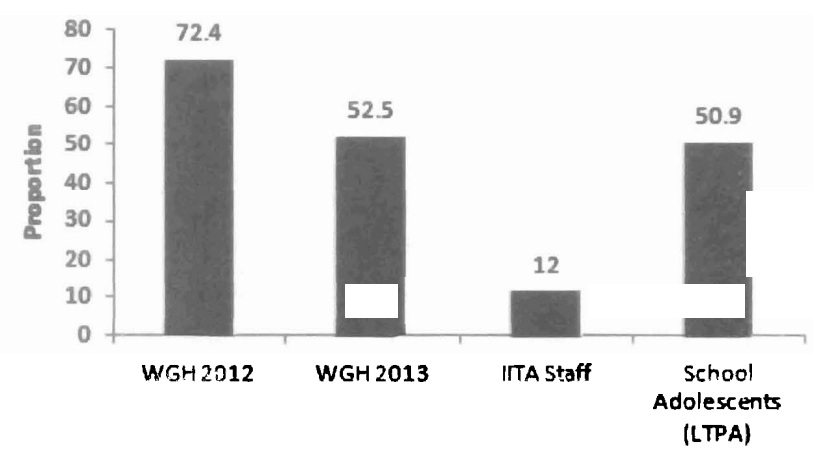


Figure 16: Prevalence of Physical Inactivity In Our studies (WGH = Wesley Guild Hospital, Ilesha; IITA = International Institute of Tropical Agriculture, Ibadan; LTPA = Leisure Time Physical Activity)

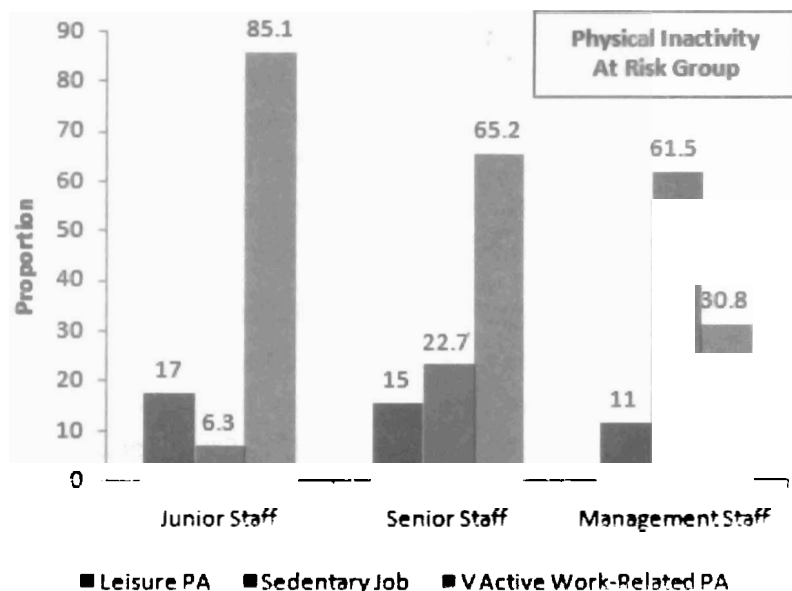


Figure 17: Physical Activity Levels among International Institute of Tropical Agriculture, Ibadan (IITA) Staff

8.1.2 Overweight and Obesity

Formerly seen as problems of the affluent and middle-aged, overweight and obesity have now been recognized as global health threats for all age groups even in developing countries. Like physical inactivity, epidemiological data have established excessive weight (especially central or android obesity) as a major predisposing factor for NCDs particularly cardiovascular diseases (CVD), diabetes, cancer and obstructive sleep apnoea. In the African setting, the social desirability of overweight and obesity as evidence of good living and higher social status stands in the way of both the appreciation of its

health hazards and prevention. In our study of the staff of our University and its Teaching Hospital, 30% of well-educated females including health workers were of the opinion that obesity confers respect; 21% reported that it is an evidence of good living and 48.6% were of the opinion that it enhances appearance⁴⁹.

My collaborative research efforts in this area have shown that the prevalence of overweight and obesity among Family Medicine clients using the body mass index (BMI) ranges between 27% and 41%, and 18% and 29.5% respectively as shown in Figure 18^{34, 46 - 52}. This was highest among elderly diabetics and always higher for females than males. **Intra abdominal and abdominal subcutaneous fat distributions have been shown to result in higher morbidity than subcutaneous fat in the buttocks and lower extremities**⁶³ In our studies, waist hip ratio (WHR, an index of abdominal fatness) classified substantially more subjects as obese (range 55.5% - 78.2%) compared with the BMI as shown in Figure 19. A relatively high prevalence of overweight and obesity of 10.6% among in-school adolescents signals a serious warning as adolescent body build is likely to track into adulthood.

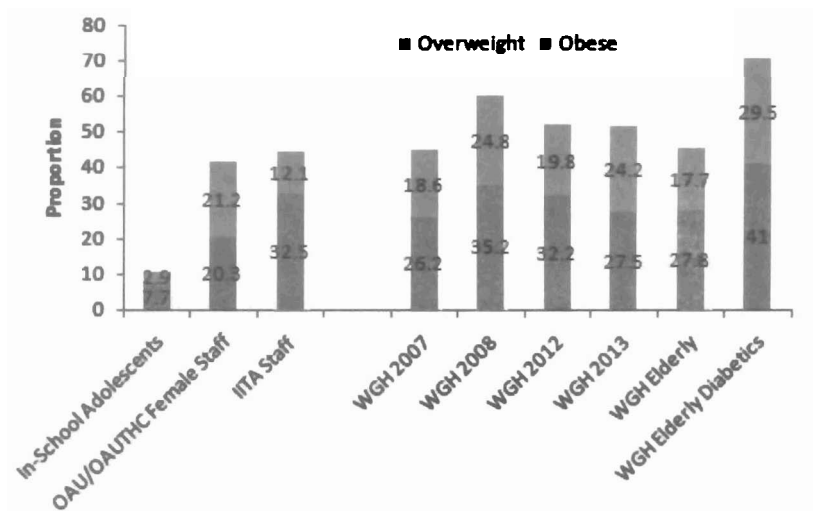


Figure 18: Prevalence of Overweight and Obesity (BMI) in Our Studies {OAU = Obafemi Awolowo University; OAUTHC = OAU Teaching Hospitals' Complex; IITA = International Institute of Tropical Agriculture, Ibadan; WGH = Wesley Guild Hospital, Ilesha}

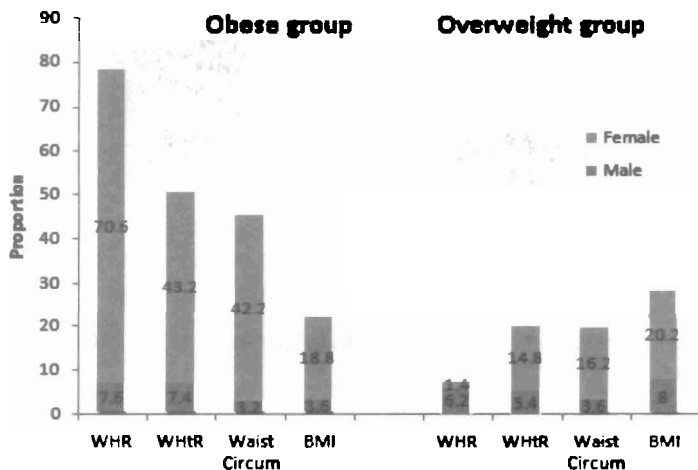


Figure 19: Distribution of Overweight and Obesity by Body Build Index and Sex of Family Medicine Clients at the Wesley Guild Hospital, Ilesha (WHR=Waist-hip ratio, WHtR=Waist-height ratio, WC=Waist circumference, BMI=Body mass index, HC=Hip circumference)

8.1.3 High Blood Sugar

There is an increasing prevalence of high blood sugar worldwide as a result of urbanization, westernized diet, increasing prevalence of physical inactivity, increasing overweight and obesity and the greatest increase is expected in developing countries like Nigeria^{54 - 60}. Our findings among Family Medicine clients at the Wesley Guild hospital, Ilesa^{46, 52} seem to support this as shown in Figure 20. In addition, we have found that only a third of subjects with high blood sugar were diagnosed prior to study in agreement with global estimates.

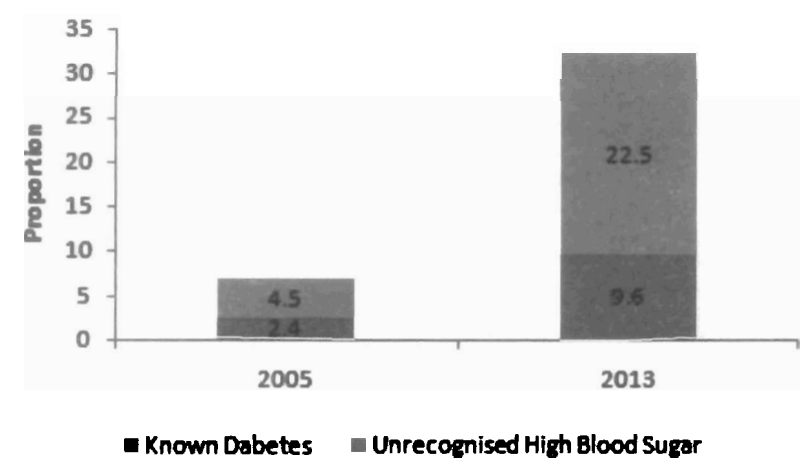


Figure 20: High Blood Sugar Among Family Medicine Clients at The Wesley Guild Hospital, Ilesa.

8.1.4 High Blood Pressure

In four of the six studies between 1998 and 2013 that assessed blood pressure, the prevalence of high systolic and diastolic blood pressures was high. As expected our findings

showed higher prevalence of elevated systolic and diastolic blood pressures in practice – based compared with community-based assessments (Figure 20). Of concern is that elevated blood pressure was observed in about three percent of in-school adolescents.

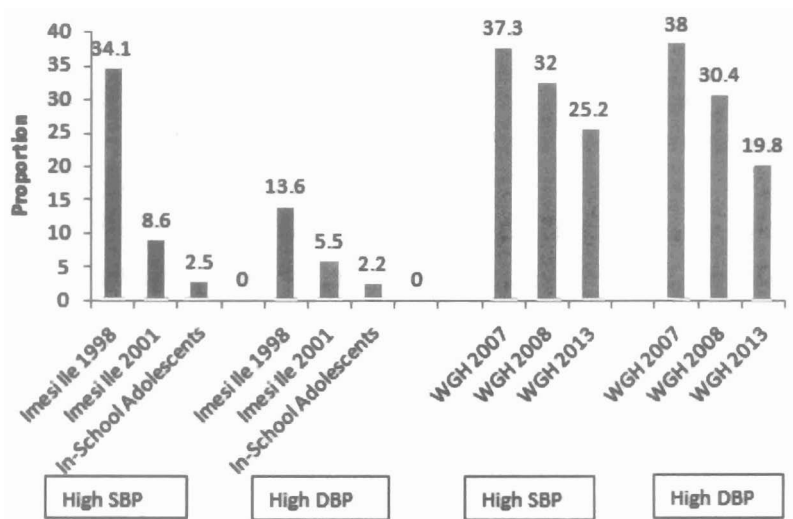


Figure 21: Prevalence of High Blood Pressure in Our Studies

8.1.5 Tobacco and Alcohol Use

Tobacco use is the single greatest preventable cause of NCDs and therefore a major risk factor for NCDs. About six million people die from tobacco use each year, both from direct tobacco use and second-hand smoke. Smoking is estimated to cause about 71% of lung cancer, 42% of chronic respiratory disease and nearly 10% of cardiovascular diseases⁶¹. It is also

implicated in several other cancers including oropharyngeal, bowel, prostate, cervical, breast and skin cancers.

Over two million people die each year from the harmful use of alcohol, accounting for about 3.8% of all deaths in the world more than half of which occur from NCDs including cancers, cardiovascular diseases and liver cirrhosis^{61, 62}.

Seven separate studies in which we estimated alcohol use among our clients in the family Medicine Department found a use prevalence of 13 to 22% while the harmful use of alcohol was found in one to four percent of the clients^{34, 46, 50 - 52, 63, 64}. Similarly, tobacco use at the time of study was found in 8.5 – 14% of clients^{46, 51, 63, 64}.

8.1.6 Cancers

A large proportion of lung, bowel, cervical, breast, prostate, liver and other cancers are preventable through the adoption of healthy lifestyles while a similarly large proportion of liver and cervical cancers are now vaccine preventable. However, most cancers are curable if detected early.

8.1.6.1 Cervical cancer

Cervical cancer is the second leading malignancy affecting women worldwide. Its mortality is high whereas it can be prevented, and 95% of patients with early cervical cancer can be cured⁶⁵. The screening of the majority of women at the risk of developing cervical cancer and the control of the disease effectively depend on the mobilization for and uptake of cervical cancer vaccination and screening by eligible women

through family medicine. This intervention has reduced cervical cancer deaths in developed countries. Our study of female undergraduates in this university revealed that none was aware that sexual exposure to the human papilloma virus is responsible for 99% of cervical cancer; none had been vaccinated; only 15 percent had been previously screened despite awareness of cervical cancer screening in 69% of respondents⁶⁶.

8.1.6.2 *Helicobacter pylori* – a Class I Carcinogen

Helicobacter pylori, a gram negative rod-like bacterium and class I carcinogen, potentially treatable with antibiotics with prospects for vaccine prevention, that colonizes the stomach is linked to gastric cancer and other malignancies of the bowel. My collaborative work with Nobel Laureate Barry Marshall showed that infection with the organism which is by the faeco oral route tends to occur early in childhood; colonization rate was as high as 60 - 91% in communities with poor sanitation; that diagnosis of active infection can easily be made non-invasively even in children as young as two years of age, provided the child is able to blow through a straw, was established for the first time⁶⁷. In another study we demonstrated for the first time using a novel transport medium, that the organism retrieved with a string test in remote locations can be kept viable and transported for up to 29 hours' transit time to the laboratory⁶⁸. In a local study, our team was able to determine the antibiotic sensitivity profile of 1fe isolates to guide eradication treatment for the infection⁶⁹.

8.2 Service

Mr. Vice Chancellor Sir, I joined the Department of Community Health when Dr. I.O. Abayomi was the only medically qualified staff of the Department. So, I was given the opportunity to structure the delivery, supervision and assessment of the undergraduate academic programme in Community Health (which I first coordinated for 10 years). To the Glory of God, I have been instrumental to the establishment of two key postgraduate professional training programmes in Ife, first the residency training in Family Medicine and then the residency training in Public Health, which together have changed the human resources for health (HRH) landscape and health development in Nigeria. I have been the pioneer coordinator of all the postgraduate programmes in the Department starting with the residency training programme in public health to the Master of Community Health, Master of Public Health (regular and part time/executive), and recently M Phil/PhD.

At the Teaching Hospital, I ran all the primary care services at the four main units as well as the Multipurpose Health Centre of the hospital including emergency care at the Wesley Guild Hospital for a number of years.

8.2.1 Leadership in Community Health

Up until 1990, accreditation for postgraduate training in Public Health was elusive in Ife. Following Professor R.O.A. Makanjuola's request that I should provide leadership in this regard, I spearheaded the accreditation preparation,

organized the development of the first 'accreditation standard' Public Health museum in Ife following inspection of the museums in Ibadan and Yaba, reactivated the Imesi-Ile village health committee for a successful accreditation process. This programme has trained many notable PH Physicians in Nigeria among which are three of professorial cadre in our College today.

I was appointed Acting Head in 1995 over a fragmented department experiencing fierce inter-professional conflicts between medically and non-medically qualified academic staff, which extended to technical staff. With God's help, I fostered a good working relationship in the Department. Today, I am proud to report that we have a strong and growing multidisciplinary department. By 1995, a Master of Community Health Degree (with a major contribution from Professor M.K. Jinadu) had been approved by senate but kept in file. As Acting Head, mobilizing staff within and without the Department including Professor O.A. Fatusi (then in UNFPA), I kick started the second academic postgraduate programme in the Department. The first is the fellowship programme in Public Health.

8.2.2 Leadership at the Institute of Public Health

As Acting Director of the Institute from 2013 to 2015, I succeeded in securing Governing Board approval for an increase of the 20-year-old unitary to a six-member academic staff establishment, secured a permanent site for the Institute, raised ₦10 million cash donations, another ₦22

million pledge, and a pledge for the public health laboratory complex, purchased a brand new official car as the only self-funding Institute in the University and enhanced the visibility of the Institute both locally and internationally. During my tenure, the Institute initiated offsite health manpower training and commenced community health care outreaches under the able leadership of Dr Lola Irinoye, Coordinator of the Institute's Health Promotion and Non Communicable Diseases' Unit.

8.3 Medical Education

Mr. Vice Chancellor sir, my major contribution to human resources for health development in Nigeria is the commencement of teaching in Family Medicine (second in Nigeria to University of Calabar) and Health Management at both undergraduate and postgraduate levels not just within the Department but across departments in our College. These two sub-disciplines of medicine shape health services delivery and development worldwide. I am delighted to observe that the revised undergraduate curriculum has dedicated postings for both Family Medicine and Health Management. I single-handedly ran the Imesi Ile students' rural posting which was then a distinct posting based in the College.

Of note, is the fact that I have built the capacity of many practitioners in the national health workforce today in both Public Health and Family Medicine fields. In Family Medicine alone, I have impacted a few hundreds of Family Physicians in the Nigerian health field.

The National Universities' Commission (NUC) in further emphasizing the importance and relevance of undergraduate family medicine teaching recently stipulated the establishment of Departments of Family Medicine and structured postings in Family Medicine as part of minimum benchmark (2015) for MBBS/BDS programmes in Nigeria. The NUC regulation, seven decades after the establishment of the first university department of General Practice in Edinburgh⁷⁰, is in recognition of Family Medicine as a university clinical discipline to

- i. teach the unique body of knowledge, skills and attitudes in FM in undergraduate medical education,
- ii. promote original (person centred rather than disease centred) research to establish the nature of FM and improve delivery of clinical care
- iii. run postgraduate academic courses in Family Medicine,

and a recognition of its role in Universal Health Coverage for good population health outcomes in line with the observation of several authors⁷¹⁻⁷⁴.

8.4 National and Regional Contribution (1989 – 1996.)

Graduating as one of four pioneering fellows in General Practice by examination in Nigeria and the sub-region with Chief (Dr.) A. S. Agbaje Prize for the best all round performance in the FMCGP Finals in 1985, it was just a matter of a short time of four years to be conferred the responsibility

as Faculty Secretary and National Training Coordinator for Family Medicine in Nigeria and later West Africa. It was during this period, Mr Vice Chancellor Sir, that the foundation for changing the landscape for Family Physician - led health services in Nigeria was laid as the number of accredited training centres (and correspondingly trainers and trainees) increased tremendously (from 28 to about 70). I was also instrumental to the take-off of the vocational training in FM in Ghana.

9 Conclusion

Mr. Vice Chancellor Sir, I have presented the burden of non-communicable diseases globally and nationally as well as the evidence from our collaborative work in this area, showing that NCDs and associated risks are not the problem of only the affluent and later life. Most NCDs and NCD related premature deaths are largely preventable and the means to prevent and control NCDs are not only available, they are feasible and cost-effective. The evidence base for action continues to grow. Actions to prevent and control NCDs should occur over the entire life course at multiple stages of life. I have also presented the role of Family Medicine in the control of the epidemic. Only a combination of population-wide, family-focused and individual interventions using cost-effective initiatives that strengthen the overall health system is capable of arresting and reversing the trend to reduce NCD burden, improve population health outcomes, curtail health

expenditure and promote socioeconomic development. However, national awakening to recognize the need for action, mount a commensurate national response, strengthen the national health system for appropriate response is overdue. **The time to recognize NCDs as a national priority and take timely action is now.**

Nationally determined sets of the needed basic health services (promotive, preventive, curative and rehabilitative) and essential, safe, affordable, effective and quality medicines must be made available to all through universal health coverage, UHC. As part of the family-focused and individual interventions for NCD prevention and control, families and individuals must take responsibility for their health, adopt healthy lifestyles and make optimal use of preventive services (Tables 3 and 4).

Table 3. Health Actions

SN	Health Actions
1	Do not smoke
2	Use alcohol in moderation, maximum 2- 4 units/day
3	Reduce salt intake
4	Eat lots of green vegetables and fresh fruit daily
5	Cut down on animal fat and avoid saturated f /Trans fatty acids
6	Females between 9 and 26 years' of age, take full vaccination for human papilloma virus responsible for majority of cervical cancer
7	Know your Hepatitis B immunity status and take full Hepatitis B vaccination if not protected.

Table 4: The Ten Command Civic Duties of all Nigerians (Issued by NCD Expert Committee on Non-Communicable Diseases)

S/N	DUTIES
1	Exercise daily (including walks)
2	Know blood pressure from age 30 and above (annually/six monthly
3	Know blood sugar from age 40 years
4	Know sickle cell genotype of all family
5	Monthly breast self-examination by females from age 17
6	Know presence of hepatitis B surface antigen in blood of family members
7	Know prostate specific antigen (PSA) blood level (men 50 years)
8	Women screen for cervical cancer (PAP Smear) every 2 – 3 years
9	Know blood cholesterol by obese or overweight people from age 40 years
10	Know body mass index (<u>BMI</u>) $\frac{\text{weight in kg}}{\text{Height X height (meters)}}$

10 My Future Plans

The prevention and control of NCDs is a growing field. Updating the evidence for trends in prevalence and the associated health behaviours, developing interventional strategies and implementation research will be top on my research agenda. With the changing structure of modern society especially the disintegration of the extended family

structure and the strong economic strain on nuclear families, the changing patterns of social integration, the relational context of social relationships and the changing role patterns of the family in health care constitute an active research area of interest of mine.

11 Closing Reflections

In closing, I give all Glory and Honour to Him who is worthy to receive my praise for apart from Him, I have no claim. In spite of my “clever” plans, He only was able to direct my path placing several people along that path to bring me here today. To Him be Glory and Honour forever more. Mr. Vice Chancellor Sir, permit me to acknowledge the men and women God placed along my path. The very first person is none other but my darling wife who gave up her very promising field of interest as an Industrial Chemist to support me to be a Family Physician. I thank everyone here seated to share the joyous moment of today with my family. I appreciate Professor O. O. Akinkugbe who painstakingly supervised my dissertation for the fellowship of the National Postgraduate Medical College of Nigeria. I am indeed grateful for the honour of Professor and Mrs A.O Lucas’ presence on this occasion. I acknowledge the support of Professor O. O. Kale, Professor Mrs. E. A. Olumide and Professor M. C. Asuzu from the University of Ibadan. I am very grateful to Professor Femi Soyinka, Dr I. O. Abayomi, Professors E. O. Ojofeitimi, B. A. Fajewonyomi, A. Akinsola, O. Lawal, E. O. Ogunbodede, R.

O. Soetan and E. Adejuyigbe from our University. I am grateful to Professors Max Kamien and Barry Marshall both of the University of Western Australia. My special thanks go to Dr. O. A. Ajayi, PNMC, Dr. A. O. Sangowawa, Dr. O. O. Oyawoye (Okin Hospital Osogbo) and Dr. W. C. Gaventa (Baptist Mission).

Mr. Vice Chancellor Sir, I thank you very specially for your extreme goodwill to permit me to deliver this inaugural lecture today which is very unconventional in our University. I also thank the University for the opportunities to grow and serve in various capacities. I thank the entire staff (past and present) in the departments of Community Health and Family Medicine and all my friends who helped to arrange things especially with the change of date. The good Lord will reward you abundantly. I appreciate all my colleagues in the Faculty of Family Medicine of both National and West African Colleges, the leadership and entire membership of the Society of Family Physicians of Nigeria (SOFPON).

On a day like this, it is indeed a honour for a Prince which I am to have seated for this Inaugural lecture a royal father and counsellor per excellence in the person of His Royal Highness, Kabiyesi Oba Adewale Kassim, The Awara of Iwara and the Olori of Iwara. Baba thank you for your prayers. I must acknowledge my beloved parents with profound gratitude to God who blessed me with excellent parents on both sides (now resting from their labours) who nurtured, trained and guided me to bring me to this feat. My parents wanted me to

do medicine when I was in fact in love with engineering. There has been no occasion for regret. I thank Mama and Baba Osundiya, Reverend and Mrs. S. B. Kuteyi, Engineer and Mrs Yemi Agunbiade, Engineer and Mrs Tayo Agunbiade, Pastor and Mrs. Bernard Eni, Dr. and Professor Mrs. Adeoti, Pastor and Mrs. Wole Kuteyi, Engineer Modupe Olu-Okuo, all the Agunbiades, Kolawoles and Adefokuns, Iya Yeye's lineage and Kuteyi Dynasty. I thank all the brethren from the Anglican Communion and the Full Gospel Business Men's Fellowship International.

Finally, my profound gratitude goes to my Darling wife and friend for her great understanding, love, care, patience and support these 36 years of our marriage. I adore you love. I appreciate my children, Mr and Dr. (Mrs) Imonitie, Mr and Dr (Mrs) Ibilola, Dr. A. O. Kuteyi (Family Physician), and Engineer T. O. Kuteyi, and grandchildren for their invaluable support and love. There are too many very important people here that for lack of time I am unable to acknowledge individually. I thank you all specifically for your kindness and valued support.

I thank you for listening. God bless you abundantly.

To God be the Glory, great things He has done.

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