

# Public Health Education: An Agenda for Communicable Disease Control in Africa

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## Abstract

*The purpose of this paper was to examine the role of public health education and in the control of communicable diseases in Africa and highlights the responsibilities of the Health Educator. It was shown that communicable diseases account for a significant proportion of the global disease burden and are a major cause of death and disability on sub-Saharan Africa. Core role of health education as a communicable disease prevention strategy were highlighted to include: preparedness, commitment, containment and case management, surveillance, and evaluation community participation for communicable disease control. Prevention of communicable diseases was considered in the work as the best form of control by the application of simple low cost, and cost effective preventive and intervention strategies. Public health education was viewed in the work as a core intervention in the prevention and control of communicable. It was recommended that public health education professionals should facilitated to exercise their role for health promotion in the multi-disciplinary and collaborative health team the world over.*

## Introduction

Communicable diseases account for a major proportion of the global disease burden causing significant morbidity and mortality (Murray, 2015). The World Bank (2015) added that despite remarkable progress in public health, communicable diseases continue to be a major cause of death and disability in sub-Saharan Africa. Similarly, as Connolly, Gayer, Ryan, Spiegel, Salama, and Heymann (2004) observed, disease outbreaks rather than trauma is the major cause of death in emergency and post conflict situations due to displacement, malnutrition and limited access to basic needs, sometimes raising baseline death rates sixty times. Recently the West African sub-region witnessed an outbreak of Ebola Virus Disease a disease not previously endemic to the region which killed more than 10,000 people, caused untold physical and disability and disrupted the social structure of entire regions in some West African countries.

Major communicable diseases of public health significance in Africa include Malaria, Cholera and other diarrheal diseases, Pneumonia, Tuberculosis, HIV/AIDS, Meningitis, Hepatitis, Poliomyelitis, Measles and other childhood vaccine-preventable diseases, Typhoid fever, Haemorrhagic fevers including Lassa fever and Ebola Virus Disease and sexually transmitted infections like Syphilis, gonorrhoea, Chlamydia, *Lympho Granuloma Venerum* (LGV). Other emerging communicable diseases of public health significance include the Avian Influenza Virus (Bird flu), Severe Acute Respiratory Syndrome (SARS) and recently the Middle East Respiratory Syndrome (MERS).

There has also been the re-emergence or increased prevalence of diseases in areas where they had previously been eradicated or were under control. There is now evidence that malaria patients are more prone to acquiring HIV/AIDS and vice versa. The present HIV/AIDS pandemic has reversed the declining epidemiologic curve of tuberculosis and many HIV endemic countries in Sub-Saharan Africa report more than 50% of TB patients have HIV. The trend is further worsened by the emergence of a new strain of Extreme Drug Resistant TB (XDR TB) that is not responsive to the routine anti-TB medication (Johns Hopkins School of Public Health, 2008).

## Meaning of Basic Concepts

**A communicable disease.** The Johns Hopkins School of Public Health in 2008 defined a communicable disease as an illness that arises from transmission of an infectious agent or its toxic product from an infected person, animal or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector or environment. The term communicable and infectious diseases are used interchangeably. In

the classic representation often applied to infectious disease, a disease arises from a complex interaction between the person or host, the disease agent (virus, bacterium, fungi or parasite) and the environment and this may manifest in epidemic or endemic forms.

An epidemic is defined as the occurrence of cases of an illness with a frequency that is clearly in excess of what is expected in a given region, therefore demanding emergency control measures. It might be preferable to report it as an outbreak because it appears to cause less panic than epidemic. An outbreak is caused when there is a change in equilibrium between the population's susceptibility (host or reservoir), the virulence of the infectious agent (bacteria, viruses, parasites, or fungi and their products) and the environment. Immune deficient people like those with HIV, TB and malnourished are more susceptible to infections as well as children under 5 years of age and the elderly (Johns Hopkins School of Public Health, 2008). In all of these, the disease may appear as a frank discernible case or the victim may serve as a carrier.

**Carriers.** These are people who have been exposed to an infection, that is, people who have been infected by a communicable disease but without showing biological or clinical signs of the infection but are capable of transmitting the infection to other susceptible persons and these are of serious public health importance.

**Public health.** Even professionals in the field struggle to define public health precisely thus there are a number of definitions. Public health is defined as the science of protecting the safety and improving the health of communities through education, policy making and research for injury prevention (University of Pittsburgh Graduate School of Public Health, 2015). A classical definition refers to it as the science and art of preventing disease, prolonging life and promoting health and efficiency through organised efforts for the sanitation of the environment, control of communicable diseases, education of individuals on the principles of personal hygiene, organisation of medical and nursing services for the early diagnosis and preventive treatment of diseases, and the development of social machinery which will ensure every individual a standard of living adequate for the maintenance of health and so organise such benefit to enable individuals realise their birth right of health and longevity (Winslow, 1920). Modern public health practice requires multi-disciplinary team of public health workers and professionals and involves essentially every health care action in an inclusive manner.

**Health Education.** A number of definitions are also available to explicate the meaning and application of the term health education. It is defined by the Joint Committee on Health Education and Promotion Terminology in 2001 as any combination of planned learning experiences based on sound theories that provide individuals, groups and communities the opportunity to acquire information and skills needed to make quality health decisions (Gold, 2001). The World Health Organization (1998) also defined it as comprising of consciously created opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge and developing life skills which are conducive to individual and community health.

Thus, Public Health Education is a core intervention in programme targeted at the prevention and control of communicable diseases. Simple low cost measures like hand washing, boiling of drinking water, washing of fruits and proper cooking of meats before consumption, proper disposal of wastes and faeces, clearing of drains and bushes around homes United Nations Children Fund (2007), use of the long lasting insecticidal nets, home remedies like use of salt sugar solution, breast feeding, abstinence or use of condoms, proper ventilation and avoidance of overcrowding in homes and routine measures like immunization, Vitamin A and Zinc supplementation have been shown to be very effective in the prevention of most communicable diseases.

### **Control of communicable diseases**

In spite of the best efforts to prevent communicable diseases, outbreaks still occur thus the logical and effective approach is to be prepared to tackle them by reducing its occurrence, reducing its efficacy, or eliminating its presence. The term disease control describes operations aimed at reducing:

- (a) The incidence of disease;
- (b) The duration of disease and consequently the risk of transmission;
- (c) The effects of infection, including both the physical and psychosocial complications; and
- (d) The financial burden to the community.

Control activities focus on primary prevention or secondary prevention but most programmes combine both. Primary prevention can be defined as the action taken prior to the onset of disease which removes the possibility that the disease will ever occur. It signifies intervention in the pre-pathogenesis phase of a disease or health problem. Primary prevention seeks to prevent the onset of specific diseases via risk reduction or by enhancing resistance Association of Faculty of Medicines of Canada – AFMC, (2015). The World Health Organization (WHO, 2005) has recommended the Population (mass) strategy and the High risk Strategy approaches for the primary prevention of chronic diseases where risk factors are established. Primary prevention may be accomplished by measures designed to promote general health and wellbeing and quality of life of people (Health promotion) or by specific protective measures.

Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health (WHO, 2005). Core health promotion activities include health education, environmental modifications, nutritional intervention, lifestyle and behavioural changes. Specific protective activities include immunization and seroprophylaxis, chemoprophylaxis and use of specific nutrients and supplementation.

Secondary prevention is defined as an action which halts the progression of a disease at its incipient stage and prevents complications (WHO, 2005). The specific interventions are; early diagnosis (e.g., screening tests and case finding programmes) and adequate treatment. Secondary prevention attempts to arrest the disease process, restore health by seeking out unrecognised disease and treating it before irreversible pathogenic changes take place and reverse communicability of infectious diseases. It thus protects others in the community from acquiring the infection and primary prevention for the potential contacts. The earlier the disease is diagnosed and treated the better it is for the prognosis of the case and in the prevention of the occurrence of other secondary cases. Health education also plays a major role in secondary prevention as it creates awareness of endemic diseases, teaches the population to recognise early symptoms and encourages them to seek early diagnosis and treatment.

Also, tertiary prevention is used when the disease process has advanced beyond the early stages and seeks to soften the impact caused by the disease on the patient's function, longevity and quality of life. Here remedy is rehabilitative whereby attempts are made to restore functioning that has been incapacitated by the disease condition or to enable the individual to adjust and adapt to the condition for productive life years.

### Communicable Disease Control Strategies

Many strategies have been used successfully over the years and particularly in recent times in the field of public in disease control; some of which include preparedness, containment and case management, surveillance and evaluation (Johns Hopkins School of Public Health, 2008).

1. **Preparedness.** This involves proactive measures usually instituted before an outbreak. Some of such actions include
  - i. the designation of responsible institutions/appropriate inter-agency co-operation;
  - ii. development of an action plan for tackling the outbreak;
  - iii. identification and training of health workers and volunteers;
  - iv. estimation and location of needed resources (drugs, vaccines, consumables, etc.);
  - v. assessment of treatment and diagnostic facilities;
  - vi. establishment of referral facilities including laboratory;
  - vii. establishing functioning sanitation system and safe and sufficient water supply;
  - viii. development of treatment protocols; and
  - ix. health education of the community.
2. **Containment and case management.** This usually follows an outbreak. During this phase, (i) health education continues to create public awareness and mobilise community to use simple preventive measures and refer cases, (ii) continue prevention in the host community and neighbouring areas, (iii) establish contingency plans, (iv) if outbreak is of highly pathogenic strains, isolate victims and trace, (v) monitor and possibly isolate positive contacts. Other measures include the (vi) use of referral laboratory for confirmation, (vii) use of appropriate diagnostic and treatment algorithms, (viii) administration of prophylaxis, (ix) appropriate handling and burial of dead bodies, (xii) and decontamination of contaminated places.
3. **Surveillance:** This defined as the on-going systematic collection, analysis and interpretation of health data, which is essential to the planning, implementation and evaluation of public health practice. It includes timely dissemination of data to those who need to know and the application of this data to disease prevention and control. Good surveillance is vital for successful control of communicable diseases and can increase understanding about the changing disease patterns as well as guide disease control measures. The facility base health information system should be augmented with a community based surveillance that uses volunteers and community health workers or health information teams to gather essential data through home visits and other means.
4. **Evaluation:** This the process by which results out outcome of intervention, actions, or services are compared with the intended objectives. It involves the assessment of how well a programme is performing, is capable to meet or actually meets the objectives for which such intervention was designed and implemented. Evaluation is crucial in identifying health benefits and performance difficulties. It provides the feedback loop for any intervention and guides further actions. Activities include constant monitoring and review.
5. **Community participation:** Communicable disease control is more effective when there is community participation. This is a process in which community people would become involved in both delivery of and decisions about health and health service in order to provide the type of care most appropriate to their own defined needs and circumstances (Johns Hopkins School of Public Health, 2008). By knowing the disease they should look for and make the community aware of, they constitute a formidable early warning system. Community

leaders, community volunteers and community health workers as well as supporting agents and agencies in the community, can play a critical role in planning and carrying out effective prevention strategies such as health education and satisfaction, thereby ensuring positive behavioural change. Community involvement can also enhance case detection, identification of defaulters, and sustainability of interventions.

### **Role of the Health Educator in Disease Control**

Health education is a profession of educating people about health (McKenzie, Niger, & Thackeray, 2009). Gold, (2001) pointed out that a health educator is a professionally prepared individual who serves in a variety of roles and is specifically trained to use appropriate educational strategies and methods to facilitate the development of policies, procedures, interventions and systems conducive to the health of individuals, groups and communities. The National Commission for Health Education and Credentialing - NCHCEC (1996) discussed seven areas of responsibilities outlined in the Competency Based Framework for the professional development of certified health education specialists (NCHCEC 1996). These include:

1. Assessing individual and community needs for health education.
  - (a) Provides the foundation for programme planning
  - (b) Determines what health problems might exist in any given group.
  - (c) Includes determination of community resources available to address the problem
  - (d) Careful data collection and analysis.
2. Plan health education strategies, interventions and programmes.
  - (a) Actions are based on the needs assessment done for the community.
  - (b) Development of goals and objectives which are specific and measurable.
  - (c) Interventions are developed that will meet the goals and objectives.
  - (d) According to the rules of sufficiency, strategies are implemented which are sufficiently robust, effective enough, and have a reasonable chance of meeting stated objectives.
3. Implement health education strategies, interventions and programmes.
  - (a) Implementation is based on a thorough understanding of the priority population.
  - (b) Utilize a wide range of educational methods and techniques.
4. Conduct evaluation and research related to health education.
  - (a) Depending on the setting, utilize tests, surveys, observations, tracking epidemiological data or other means of data collection.
  - (b) Health educators make use of research to improve their practice.
5. Administer health education strategies, interventions and programmes.
  - (a) Administration is generally a function of the more experienced practitioner.
  - (b) Involves facilitating co-operation among personnel both within and between groups.
6. Serve as a health education resource person.
  - (a) Exercise skills needed to access needed resources, and establish effective consultative relationships.
7. Communicate and advocate for health and health education.
  - (a) Translates scientific knowledge into understandable information.
  - (b) Address diverse audience in diverse setting.
  - (c) Formulates and supports rules, policies and legislation.
  - (d) Advocate for the profession of health education.

The effective implementation of these responsibilities has been the results of the breakthroughs experienced in communicable disease control over the years while also serving as a determinant for effective disease control in time and clime. As provided in the various definitions of public health, and particularly that of Winslow (1620), earlier discussed, health education profession is indispensable in communicable disease control.

### **Conclusion**

The most effective means for controlling communicable diseases is through preventive strategies. Effective prevention depends upon knowledge of causation, dynamics of transmission, identification of risk factors and risk groups, availability of prophylactic or early detection and treatment measures, effective surveillance and continuous evaluation of and development of procedures applied as well as personal and community health promotional knowledge, attitude and skills. Health education is an integral part of the strategies, skills, disciplines and philosophies for disease control and also plays a vital role during disease outbreaks. The Health Educator is a well-trained professional with well-defined responsibilities in the multidisciplinary and collaborative public health team. They should be accorded the due recognition and assisted to develop their core competencies.

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