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Review Article

Philosophical Perspectives on Community Based Non-Communicable Disease Services and the Quality of Life of People Living with HIV in Uganda

Christopher Ddamulira[1,2*], Norman Nsereko[1], Edith Akankwasa[2], Miph Musoke[1] Frank Pio Kiyingi[1]

[1]School of Post Graduate Studies and Research, Nkumba University, Entebbe, Uganda

[2]Mildmay Institute of Health Sciences, Kampala, Uganda

[*]**Corresponding Author:** Christopher Ddamulira, Mildmay Institute of Health Sciences, P.O. Box, 24985, Kampala, Uganda, E-mail: chris_ddamulira@yahoo.co.uk

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Abstract

The review paper traces and expounds the philosophical thinking on the history of the community based Non Communicable Disease(NCD) Services as a measure to improve the Quality of Life (QoL) of people with NCDs living with HIV. It explores how the historical trends, the contributions and the key contributors to the events for the advancement of the community based NCD services as key intervention for the improvement of QoL for people living with HIV. The historical and philosophical aspects of the paper guides the readers and writers on NCDs and HIV to gain a deep understanding of the trends of community NCD services and the quality of life of people with NCDs living with HIV and AIDS. It explored how people with HIV and on Anti-Retroviral Therapy (ART) become susceptible to Hypertension(HT) and Diabetes Mellitus(DM). In absence of the community based NCD services, the physical health, environmental wellbeing and social relationship QoL domains will remain poor for all the patients receiving HIV services in communities. Consequently, the co-burden of NCDs and HIV will increase in case the

prevention strategies are not implemented, the susceptibility to NCDs among the patients will increase and compromise their quality of life. The philosophical and theoretical aspects of the paper guides institutions on the development and implementation of the community based NCD services to mitigate on the effects of NCDs and improve the QoL among HIV patients on ART receiving services in communities. The philosophical and theoretical aspects of the paper guides policy development and evaluates implementation strategies to mitigate the NCD effects among people living with HIV. Good health and good QoL are fundamental human rights that have existed since the birth of medicine by the early philosophers that was supported by the modern understanding of the concept of health as noted by the constitution of the World Health Organization (WHO).

Keywords: Community; Non Communicable Diseases; Services; Quality of Life; HIV; People Living with HIV; Uganda; Theories; Philosophies

1. Introduction

1.1 Global Perspective of HIV and Non Communicable Diseases

The Non-communicable chronic diseases (NCDs) are diseases or conditions that affect individuals over an extensive period of time and for which there are no known causative agents that are transmitted from one affected individual to another [1]. The co-morbidities related to hypertension and Diabetes Mellitus (DM) as common NCDs in HIV patients on Anti-Retroviral Therapy (ART) causes reduction in the physical health, environmental health and social relationship quality of life.

The prevalence of Diabetes Mellitus (DM) and hypertension among PLHIV makes these non-communicable diseases of concern. DM prevalence in HIV infected people was approximately 14% [2, 3]. The co-occurrence of DM and hypertension in HIV was a threat to public health, especially in developing countries [4, 3]. These findings support that DM and hypertension are emerging NCDs in HIV infection and demand attention from countries with high prevalence rates of HIV infection.

The intensification of DM and hypertension in HIV infection contributes to the transition of HIV from being an acute condition to a chronic condition [3]. The co-existence of the two diseases needed integrated community services to address the barriers associated with non-integration of HIV and NCD screening and co-management in the communities to improve the environmental, social relationships and physical health domains of quality of life (QoL).

Various studies have reported the link between HIV, hypertension and Type 2 Diabetes Mellitus (T2DM) to be inherent in HIV infection itself, adverse effects of ART and long-term use of ART, in addition to lifestyle, genetics and aging [5]. Diabetes Mellitus (DM) and hypertension (HT) are among the major causes of morbidity and mortality among people living with human immunodeficiency virus [4]. Diabetes mellitus alone is associated with morbidities that consequently reduce life expectancy and quality of life, and causes demoralizing complications inclusive of ischemic heart disease, stroke, blindness and peripheral vascular diseases [6]. Therefore, health promotional activities in the communities would be important in NCDs prevention, control and improving the overall quality of life of the HIV patients.

Hypertension is an important and treatable cause of cardiovascular morbidity and mortality [2]. It is an independent risk factor for myocardial infarction, chronic kidney disease, ischemic and hemorrhagic stroke, heart failure and premature death [4]. HIV infection is associated with morbidities that consequently reduced life expectancy and quality of life [7]. There is a perceived link between HIV infection and DM and hypertension that needed analysis of the physical and environment to guide strategies that improve the QoL. The existing evidence showed that the incidence and prevalence of type 2 diabetes (T2DM) is higher among PLHIV on ART compared to the HIV negative population [8]. Being infected by human immunodeficiency virus (HIV) is implied to trigger an inflammatory response that in turn, results in insulin resistance, a risk for T2DM. HIV is linked to hypertension through alterations in triglycerides, T cells and angiotensin II as well as the aggressive use of ART. The existence of the two diseases in the same individual needed a comprehensive community approach to address issues that impact on physical health, social relationships and environmental health domains of the QoL.

The roll out of antiretroviral therapy (ART), as means to combat HIV, has benefits for PLHIV, inclusive of increased survival and living longer; yet older age is associated with hypertension and T2DM [9]. The side effects of ART and long term use of ART are implicated in increasing the risk of T2DM among PLHIV [10]. The gap that exists is the lack of integrated model to address HIV and NCD co-management at community level in Uganda. The co-occurrence of HIV, hypertension and T2DM in developing countries presents an overload to the burden of diseases, because these countries are already experiencing high prevalence rates of HIV thereby complicating the health status of the population [8]. Similarly, Grimsrud [11] alluded that the co-existence of the HIV and NCDs needed a comprehensive community strategy to address the current gaps in prevention and management of HIV and NCDs at community level. There is a need for developing community interventions that can prevent and improve the quality of life of HIV positive patients.

Sub-Saharan Africa (SSA) has been greatly affected by the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) epidemic. An estimated 68% of all people infected with HIV globally were reported by the World Health Organization (WHO) to be residing in the region in 2015 [12]. At the same time, there is evidence of an increasing burden of non-communicable diseases (NCDs) occurring in SSA resulting in a double-burden of NCDs and communicable diseases in a region with the least financial as well as human resources to deal with this effectively [13, 14]. The morbidity related to NCDs among patients compromised the quality of life. A total of 75 million people were estimated to have hypertension in SSA in 2008 and this is projected to increase to 125 million by 2025 [15]. The link between NCDs and communicable disease in SSA is being explored and some previous studies have reported associations between cardiovascular disease and risk factors such as hypertension with human immunodeficiency virus (HIV) as well as antiretroviral therapy [16]. Consequently, the QoL of people receiving services in the communities could not improve unless robust interventions are designed to bridge the gap in service provision. Despite the observed burden of NCDs in

SSA, a large donor response has been towards communicable diseases [14]. Moreover, many African countries including Uganda are spending a significant proportion of their health budgets on HIV and AIDS while giving less priority to funding for NCDs [17]. Thus, it calls for cost effective community interventions to address community problems and improve QoL.

Inevitable age-related degenerative changes (possibly accelerated in HIV infection), cumulative exposure to antiretroviral drug toxicities, effects of ongoing inflammation, progressive immune dysfunction, and long-term infection by the virus itself are postulated to drive these NCDs in HIV [18, 19]. Much of what is known about HIV and NCD comorbidities has emerged from studies in high income countries [20]. Hence, HIV and NCD integrated management in the communities would improve self-management strategies for the co-burden and improve the QoL of people with NCDs living with HIV.

1.2 HIV and Non Communicable Diseases in Uganda

Epidemiological studies in SSA have demonstrated that joint screening and linkage to care for HIV and other NCDs like hypertension and diabetes mellitus is possible although there have been barriers to linkage for NCD integration into the HIV clinics at the health facilities which has remained at around 40-50% [21, 22, 10]. The existing gaps in the HIV care and management in the communities is the non-existence of community based NCD services in the main service provision in the communities. Likewise, the prevalence of hypertension and diabetes Mellitus among HIV positive individuals has been found to high with low levels of awareness and control [23]. There was scarce data about the retention of hypertensive and Diabetic Mellitus patients into chronic care for both HIV and Non-HIV programs [10, 24]. This called for an integrated model in the HIV ART community delivery points for patients with a double burden of HIV and NCD in order to improve knowledge, control and other treatment outcomes for NCDs.

Uganda and African countries have double burden of Non Communicable Diseases (NCDs). This situation poses a major threat to fragile health systems and justifies the need for innovative integrative approaches to health care delivery [25, 9]. Health services should be reoriented to address populations` needs holistically and effectively leverage resources like existing HIV infrastructures and community HIV delivery structures in already resource-limited setting [25]. This called for rethinking of services for healthcare delivery to integrated management of co-morbid chronic conditions like HIV, Diabetes Mellitus(DM) and hypertension [10, 9]. When chronic diseases like hypertension, DM and HIV are untreated, they cause an increased risk of mortality and morbidity of the PLHIV. Integrating clinical services for HIV, DM and hypertension could make health care more effective and provide greater value for money [26]. Examples of programs that have been successfully integrated in low- and middle-income countries(LMIC) with excellent value include TB/HIV and cervical cancer with depression [9]. There was evidence that improved effectiveness and reduced costs may be achieved by integrating NCD services with existing HIV clinical care at the various health facilities and the communities where ART clients receive the ARVs and follow up visits [27].

Similarly, Kathirvel [28], alluded that the implementation of NCD strategies at sub-national level and engagement of sectors other than health on prevention and control of NCDs could be enhanced by further research for effective implementation of the identified interventions in the communities if the target is to be achieved by 2030. Hence, the findings are part of the response to reduce the NCDs in communities to improve the quality of life of individuals in families and communities. The new clinical and public health problems are emerging, for example, non-communicable diseases (NCD) such as Diabetes Mellitus (DM) and Hypertension(HT) in those living and aging with HIV on Anti-Retroviral Therapy [29]. The health and improved QoL gains made against HIV and AIDS are now under threat from hypertension and diabetes problems which are increasingly prevalent and documented among the HIV positive [30]. For example, according to Triant et al. [31], DM and hypertension diseases emerged as the leading cause of morbidity and mortality in HIV infected persons on Anti-Retroviral Therapy(ART) in developed country settings.

In recent years, there has been a rapid expansion of antiretroviral therapy (ART) for people living with HIV. Of the 36.7 million people living with HIV globally at the end of 2015, 17 million (46%) were estimated to be receiving ART [12]. The scale up of ART for people living with HIV in low- and middle-income countries(LMIC) has been associated with huge individual benefits and rising life expectancies [32, 33]. The ART benefits, increased the physical quality of life, though with increased NCDs. In Uganda, over 1.5 million people are living with HIV out of which 60% were accessing lifelong ART by the end of 2016, a figure that is expected to reach 90% by 2020[12]. This is anticipated to result from implementing the test and treat strategy that was launched towards 2016 in Uganda and by working towards UNAIDS 90-90-90 goals aimed at ending the AIDS epidemic by 2030 [34]. With expected increase in the number of HIV patients on ART with NCDs, there was a need to design strategies to improve NCD services delivery and improve the quality of life.

There has been a consistent trend towards initiating antiretroviral therapy (ART) earlier and expanding the use of ARV drugs for HIV prevention to achieve greater impact [1]. The ART treatment and prevention strategies for prevention of mother to child transmission (PMTCT), Post Exposure Prophylaxis (PEP) for exposure to blood pricks and rape was scaled up. The guidelines for the World Health Organization as of 2015 recommended, scaling up of ART initiation in all HIV positive adults, adolescents and children with HIV regardless of CD4 cell count or disease stage. The scale up of ART for people living with HIV in low- and middle-income countries has been associated with huge individual benefits and rising life expectancies [32, 33]. However, the expanded access to ART has also resulted in a new global health challenge, namely, increased co-morbidity of non-communicable diseases in those living and aging with HIV [29, 35] . It is well established that hypertension and diabetes mellitus all have direct and indirect relationships with HIV and ART, and these diseases are also a growing problem in the general population living in low- and middle-income countries, due to urbanization, changes in diet and lifestyle, and increases in life expectancy [36]. Many HIV/AIDS patients receive ART and improve the quality of life, they return to the risk sexual behaviours as soon as they feel stronger [32].

Several reasons for the risk to non-communicable diseases in adults living with HIV have been reported. Similar to the general populations, people living with HIV often have traditional risk factors for non-communicable diseases such as smoking and alcohol [37]. Similarly, certain ART drugs contribute to these complications through hypercholesterolemia, increased abdominal fat and the metabolic syndrome, although toxicity has decreased among newer generations of antiretroviral drugs [29]. People living with HIV, whether they have been initiated on ART or not, there is chronic activation of the innate immune system with excessive production of inflammatory cytokines and mediators that in turn are associated with an increased risk of atherosclerosis, coronary artery inflammation and all-cause mortality [29, 37]. Therefore, improving screening and management of comorbidities in the communities would improve the quality of life(QoL) of People Living with HIV(PLHIV). Strategies for prevention and risk reduction of cardiovascular diseases by addressing modifiable factors such as blood pressure, smoking, status obesity, unhealthy diet and lack of physical activity should be applied to all individuals with HIV [1, 13]. The existing guidelines and strategies for integration of HIV services with other diseases in Uganda have focused mainly on tuberculosis (TB), malaria, reproductive health and other sexually transmitted infections [38]. HIV care services in Uganda are not paired with NCD in the Community Drug Distribution Points (CDDP) to effect prevention and management of HIV and NCD's.

As a result, the existing evidence shows that the community based NCD services on the quality of life of patients receiving ART services in the drug distribution points is not known in Uganda [27]. Therefore, the integrated community based HIV and NCD services could be adopted as a strategic policy direction for use by Ministry of Health (MOH) structures and non-governmental organizations that contribute to the national and international responses to control the HIV and NCDs.

1.3 Community Based NCD Services and Quality of Life

Within the context of the historical and philosophical review, community based NCD services package in the communities includes; the health promotion activities, community support systems and patient monitoring systems using Village Health Teams (VHT)/ART expert clients. According to WHO [39], health promotion refers to activities that enable people to increase control over their own health. Consequently, the health promotions cover a wide range of physical, social and environmental interventions that are designed to benefit and protect individual people's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure [40]. These activities according to Rotger et al. [41] includes; raising awareness of NCD risk factors and risk reduction, early detection and screening of NCD risk factors, monitoring of patients with hypertension and Diabetes Mellitus(DM), family and community support for the self-management activities, early treatment and referral.

Furthermore, as noted by Shirley et al. [42], behavior change counseling and link with social support, lifestyle change, treatment adherence, routine monitoring, self-management, rehabilitation, pain management and psychosocial support are important

services in health promotion. The implementation of the NCD activities in the community is the main cornerstone for patients to prevent or control DM and hypertension in the rural settings, if the patients increase control over their own life to improve Quality of Life (QoL).

The World Health Organization (WHO) defines Quality of Life (QoL) as an "individual's perception of their position in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [43]. QoL is highly subjective and unique to each individual, determined by experience, culture, beliefs, and personal values, and how these may relate to anticipated life outcomes [5]. The majority of patients recognized that ART and good health contributed to their QoL, however, those with DM and hypertension co-morbidities faces challenges with NCD services in the communities in Uganda.

Furthermore, as noted by WHO [44], the environmental, physical, emotional and social relationship domains of QoL are poor in community HIV settings. The QoL is affected by inability for the patients to do daily activities, feel not accepted by the people, lack of support for daily living and support. Similarly, Peck et al. [45], commented that the co-burden of HIV and other co-morbidities(HT/DM) cause reduction in the social relationships due to lack of satisfaction with sex life, inadequate support from friends, lack of access to health services, negative feelings such as blue mood, despair, anxiety and depression. Therefore, it was important to critically review community based NCD services by the expert clients or the lay counsellors and their prediction in improving the physical health, environmental wellbeing and the social relationship domains of the Quality of Life (QoL).

2. Methodology

The information contained in this paper was reviewed from existing literature. Information on policies and declarations was reviewed from the global and contextual perspectives in line with the Community Based NCD Services and the Quality of Life (QoL). Several secondary data sources online were reviewed to build the philosophical and historical sections of this paper.

The analysis of literature was based on the variables of interest of the study that included; the community based NCD services (Health promotion, community support systems, patient monitoring systems) and the QoL of PLHIV. The literature used in this paper was generated from the major search engines such as Google scholar, HINNARI, Publication of Medical Journals (PubMed), Medline, Open Access journals and books related to the Community Based NCD Services and the QoL with the aim of bringing out the contributions, the limitations, differences and gaps. The paper was restricted to the historical and classical philosophy on community NCD services and quality of life of people living with HIV. The historical and philosophical aspects of the paper will help the readers to gain a deep understanding of the trends of community NCD services and the quality of life of people with NCDs living with HIV and AIDS in Uganda.

2.1 Historical Trends of Community Based NCD Services

The section outlined the historical trend, the contributions and the key contributors to the events

for the advancement of the community based NCD services. The historical paths would help the readers and writers of the research papers to get deeper understanding of the trends and development of the community based NCD services from the various contributors as discussed below. Table1 summarized the period, the contribution and the key thinkers to the development of the community based NCD services.

2.1.1 Philosopher Plato History: The great philosopher Plato put forward hugely influential views on the constitution of life and health. Questioning Plato's metaphysical ideas, Aristotle called for the systematic observation of nature [46, 47]. Thus, health promotion and education activities placing an emphasis on correct diet and physical exercise were early accomplishments of the ancient Greeks. It was also of great value that health education, based on a holistic perception of health, was closely related to the physical and social environment, establishing in this way the foundations for community health promotion activities in the modern era [48]. The philosopher considered strategies that addressed the physical health domain of quality of life, rather than the holistic approaches to the total QoL, which includes environmental wellbeing, social relationship and emotional well-being.

Furthermore, many researchers maintain that the treaties constituted the first recorded systematic effort to uncover the causal relationship between environmental factors and disease [48]. For more than 2000 years, this was the basic epidemiological concept, which provided the theoretical underpinnings for understanding the interaction of the community factors and the Non Communicable Diseases (NCDs).

The ideas about the environmental determinants of health are modern ideas for improving health inequalities among populations [49]. Plato's ideas pointed out that human beings are born with hereditary raw materials but what is made of these genetic characteristics largely depends on environmental factors and that health can be promoted in supportive environments in the communities where human beings reside [50]. The philosophical underpinnings based on the epidemiological concept, studies only the interaction of the agent, the disease and the environment where the human beings live. Therefore, the social relationships and emotional wellbeing domains of the QoL were not put into consideration by the early philosophers that supported the epidemiological concepts to disease prevention.

2.1.2 Greek History (6^{th}-5^{th} Century BC): The community NCD services are traced back in the Greek history. The ancient Greeks developed a philosophy of health and medicine in which knowledge from the Babylonians, Egyptians, Hebrews, and other eastern Mediterranean people was included. There was evidence of systematic participation in organized physical activity to promote the health of citizens as early as the 13th and 12th century BC [51]. Furthermore, Tountas [52] noted that, the golden age of Greek history (6th - 5th Century BC), involved men to participate in physical games of strength and other skills which included swimming. However, the Greek history was commended for the early initiatives for the diseases prevention, though it targeted mainly the physical aspects of Quality of Life(QoL) rather than the comprehensive approaches that could improve the environmental wellbeing, the physical health, social

and emotional wellbeing (social relationship) of the QoL domains.

2.1.3 19th Century in the United States of America (USA): The Birth of Modern Public Health: The developments in the USA during the 19th century are considered as the birth of the modern era of public health [53]. In 1850, the public health innovator Lemuel Shattuck carried out work and made a report for the Commonwealth of Massachusetts [54]. Furthermore, several recommendations and public health measures were considered such as; collecting vital statistics on the community health, health education and messages for the communities to control alcohol, control exposure to smoke, control adulterated food and minimize quack medicines [54]. The gap that existed in history of USA was non-inclusion of the NCD services that would improve the social and the emotional wellbeing (social relationships) aspects of the quality of life.

2.1.4 WHO Constitution and Declaration (1948): Plato's philosophy was supported by the modern understanding of the concept of health as noted by the World Health Organization [40], health was defined as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". Furthermore, Kemm et al. [55] noted that the health of the community was all about promoting equity in health services. The world Health Organization [40] noted that health promotion included all activities which are intended to prevent diseases or promotes positive health.

The factors that have the greatest influence on the health outcomes of the communities includes; the environment (such as cultural environment, socioeconomic environment), lifestyle or behaviour (such as smoking, alcohol consumption etc.) and the health system (health care services) of a population. As a strategy to improve health for all, the World Health Organization [56] as noted by Andersen [57], recommended a collective responsibility concept that culminated into activities which the society and state undertake to assure the conditions in which people can be healthy, including organized community health efforts to prevent, identify and counter threats to the health of the public.

The World Health Organization [56] declared community health as important aspect of public health to prevent diseases at community level. The organization declared all efforts (public and private) by individuals, groups and organizations to promote protect and preserve the health of those in the community [56]. The declaration emphasized the need to focus on those factors (determinants) which have the most influence on the health of the population. Focusing on those determinants which have the most influence on the health of the population improves the health of the population. These factors include; environment, social (life style) and biology (hereditary factors). Therefore, the current attempts in the globalized world at health reform will not be successful at improving health indicators unless the population health determinants are addressed [58].

2.1.5 Alma Atta Conference (1978): For the developing world, the WHO, in 1978, convened a conference in Alma Atta, in the former USSR and made a resolution for all the people of the world to attain a level of health that would enable them lead a satisfactory and productive life [59]. The Alma Atta declaration which was popularly named "Health for

All by the Year 2000" was to be achieved through primary health care strategy (PHC). Primary health care was defined as essential health care made universally accessible to individuals and acceptable to them, through their full participation. These services include; Health education (education concerning prevailing health problems and the methods of preventing and controlling them). As noted by WHO [60], the implementation of the strategy still had gaps in many developing countries including Uganda, due to constrained resource. Many countries are implementing selective PHC as opposed to the recommended comprehensive PHC for the benefit of the communities for the primary prevention of NCDs.

In 2001, the Ministry of Health-Uganda established the Village Health Teams (VHT) strategy as an innovative approach to empower communities to participate in improving their own health as well as strengthen the delivery of health services at both community and household levels [38]. The VHT strategy had a potential to improve rural access to healthcare due to their mix of preventive, promotive and basic curative roles. Hence, the health status of Uganda's population greatly improved [61] . The strategy had gaps in addressing the social, emotional and psychological wellbeing of the QoL.

As the treatment options for HIV have expanded and improved, management approaches have transitioned from acute, emergency care to chronic care. The chronic care management for HIV is a platform that can be leveraged to integrate NCD services that are otherwise lacking in the communities where the VHT strategy was success [26]. The similarities in prevention, detection, care and long-term management of HIV and NCDs in resource limited setting highlighted such opportunities.

The increasing evidence describes how the interplay of traditional risk factors for NCDs, HIV and antiretroviral treatment (ART) lead to an increased prevalence of NCDs among HIV-infected individuals. This increased risk is a result of several factors: the HIV disease itself, HIV treatment, higher NCD behavioral risk factors among people living with HIV (such as tobacco use), longevity as a result of ART and an escalating NCD epidemic in the general population that includes people living with HIV [62]. Therefore, leveraging existing HIV programs provides an avenue for the successful implementation of HIV and NCD services at community level.

2.1.6 Ottawa Charter (1986): As noted by Agide and Shakibazadeh [63] , evidence exist that Ottawa charter in 1986 set appropriate goals, lifestyle modifications, appropriate self-monitoring of blood glucose, medications, regular monitoring for complications, and laboratory assessment as important factors that were endorsed within Ottawa Charter five actions. Lifestyle interventions and physical activities are the most important factors recommended in different reviews and interventions. Currently, the existing HIV strategies in communities do not integrate NCD disease prevention in Uganda. Furthermore, Type 2 Diabetes and hypertension directed health promotion interventions implemented in various countries and communities are not integrated into Ottawa charter frameworks [60] . Thus, applying all the basic principles of health promotion and the idea of Ottawa Charter articulation is very important in disease prevention and behavioral change.

2.1.7 Millennium Development Goals (MDGs) and the NCD Agenda (2000-2015): The United Nations Millennium Declaration, signed in September 2000 committed world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women [64]. The approaches to prevention and control of non-communicable diseases (NCDs) were elaborated in the political declaration of the UN high-level meeting on NCDs and governments have adopted a goal of 25% reduction in relative mortality from NCDs by 2025 (the 25 by 25 goal). Thus, Alleyne [65] recommended a strong movement that was based on the evidence, enhanced by effective partnerships, and with political support to ensure that NCDs are embedded in the post-2015 human development agenda.

All heads of state resolved that NCDs should be embedded in the post-2015 development agenda, since they are leading causes of death and disability, have a negative effect on health, and through their effect on the societal, economic, and the environmental domains, impair the sustainability of development and the Quality of Life(QoL). The strategies to fulfil the MDG agenda needed integration of the social and emotional wellbeing as part of the strategy to improve the QoL of PLHIV and AIDS by 2015.

2.1.8 Sustainable Development Goals (SDGs) and the NCD Agenda (2015-2030): The SDGs clearly articulated the prevention of NCDs in the Post-2015 Millennium Development Goals (MDGs). The United Nations (UN) declared to reduce one-third of deaths from the NCDs. Furthermore, the SDG number three, emphasizes the promotion of healthier life styles, reduce the major causes of ill health, and to ensure prompt and equitable access to health services [66]. The strategies called for strengthening prevention and treatment of NCDs and avoid smoking and harmful use of alcohol.

Similarly, Kathirvel [28] alluded that the implementation of NCD strategies at sub-national level and engagement of sectors other than health on prevention and control of NCDs could be enhanced by further research for effective implementation of the identified interventions in the communities if the target is to be achieved by 2030. The SDGs emphasized the NCD services as part of the physical health domain of the QoL, but had gaps in addressing the social relationship and environmental domains of QoL. Therefore, the integration of HIV and NCDs will strengthen the intended achievements of SDGs by 2030 in improving the overall quality of life of patients with HIV living NCDs.

No	Period	Contribution	Key Thinker (s)
1.	427-347 BC	Foundations for community health promotion activities based on diet	Plato
2.	6th-5th Century BC	Philosophy of health and medicine based on participation in physical activities	Ancient Greeks
3.	1850(19th Century)	The birth of the modern era of community health strategies	Lemuel Shattuck
4.	1948	Promoting equity in health services	The world Health Organization
5.	1978	Health for all and primary health care strategy	The world Health Organization
6.	1986	Lifestyle change interventions	The world Health Organization
7.	2000-2015	The approaches for the prevention and control of non-communicable diseases (NCDs)	The United Nations-Millennium Development Goals (MDGs)
8.	2001	The Village Health Teams (VHT) strategy was established to support primary health care services at the community level	Ministry of Health (MOH)-Uganda
9.	2015-2030	The strategy for strengthening prevention and treatment of NCDs	The United Nations-Sustainable Development Goals (SDGs)

Table 1: Historical trends of community based NCD services.

3. Philosophical Perspectives

3.1 Aristotle's Holism Philosophy

Holism is defined as the concept that the parts, or systems, of any whole cannot exist and cannot be understood except in their relation to each other and to the whole. The general principle of holism was concisely summarized by Aristotle in the Metaphysics as the whole is more than the sum of its parts [67]. Holistic care takes the interaction of the physical, mental and social aspects of the person into account when assessing, planning and carrying out that care. Holistic, indicates the inter-connectedness of the many parts taken into consideration when planning and thinking about or taking action with the whole.

According to Aristotle as noted by Holden et al. [68], holistic care philosophy looks at person as whole. It integrates knowledge of the body, the mind, and the environment. It considers the five domains of life such as the physical, intellectual, sociocultural, psychological, and spiritual aspects of a person's life as an integrated whole. Similarly, according to Inui et al. [69], the five aspects cannot be separated or isolated; anything that affects one aspect of a person's

life also affects the other aspects. Therefore, the study needed a holistic approach to improve all the domains of the quality of life.

Holistic health care refers to an approach of analysing illness and providing health care that acknowledges and responds to all factors relevant to the health (or ill-ness) of a person. Holistic care does not signify what those factors are or how they are classified. Usually requires many interventions delivered by different organisations, including those outside normal healthcare [69]. Though, the theory emphasized the five domains of health as whole. This study looked at the four domains; that includes the social relations, the psychological, the physical and the environmental domains of the people living with HIV.

3.2 Plato's Philosophy of Human Flourishing

The great philosopher Plato emphasized that human beings should be supported in all possible ways to achieve the satisfaction and the need in life, if not supported, many of them die without perceiving their needs in life [46]. These attempt to base understanding on an account that functions, capacities, and excellences that are most fully and constitutively human should be fulfilled [70]. It is believed that human beings attain and master capacities to the extent that those conditions that would stunt or undermine those abilities should be avoided if we are to flourish as human beings.

On its own, the word "flourishing" highlights the ways in which all life forms are similar to one another [71, 72]. Flourishing is not specific to humans then; it pertains to all manner of living beings. So, another advantage of the flourishing concept is that it captures the naturalistic cast of Plato's philosophy. There is the theological argument that human's beings are fundamentally equal because they are made in the image of God [73]. There was also the Kantian argument that human being's rational agents are inherently deserving of equal respect [74]. The gap in the philosophy was consideration of the emotional and social relationship domains of the QoL and no emphasis on the physical and the environmental wellbeing domains.

Nussbaum [70] contends that human persons are deserving of equal respect because they all possess a basic level of human capacities. Nussbaum's argument may be sufficient to ground the claim that all healthy and fully-abled people should be treated as equals. Hence, the individuals should be treated as equals in all the dimensions of health; psychological, emotional, social, physical and mental health. Furthermore, MacIntyre [75] commented that all human beings are also dependent and vulnerable by nature. More than any other animal offspring, human infants are born helpless and in need of care if they are to survive and thrive. Human adults remain physically vulnerable; they all experience incidents of injury and illness, particularly as they grow older. To do well, then, humans must be able to give and receive care from others. Thus, one of the cardinal virtues of human beings is what MacIntyre [75] calls "acknowledged dependence."

3.3 Betty Neuman's Systems Philosophy

The theory is reflective and it is based on the whole-person. According to the philosophy, an individual is viewed as an open holistic being that is in comprehensive and continuous interaction with his or her internal and external environment. The internal

environment consists of those influences within the client (intrapersonal), and the external environment consists of influences outside the client, the environment was viewed as a stressor [76]. The philosophy also focuses on all the variables of the whole person. These variables are the physiological, psychological, sociocultural, developmental, and spiritual variables. To understand a human being means understanding all these variables together. Klein and White [77] supported the above idea in their statement that *"understanding is only possible by viewing the whole"*. The system had the vital element of interconnectedness and interrelatedness. When applied to the study, the concept of holism emphasizes that the village health teams(VHT), expert clients and community volunteers must keep the whole person in mind and strive to understand how one area of concern relates to the whole person. A person who is infected with HIV and is on ART has all these variables affected.

3.4 The Major Philosopher for the Review Paper

3.4.1 Aristotle's Holism Philosophy: Several philosophers such as Platos' Human Flourishing and Betty Neuman's Systems have looked at interventions that could improve the quality of life, but all these philosophers did not look at individuals in totality as the WHO [40] definition for health. It is only the Aristotle philosophy that defines the intervention services in holistic manner, that is, integrates the mind, body and the environment as fundamental constituents for designing interventions that prevents and control diseases. The philosophy considers all the domains of life such as the physical, intellectual, sociocultural, psychological, and spiritual aspects of a person's life as an integrated whole. The domains of life cannot be separated or isolated; anything that affects one aspect of a person's life also affects the other aspects [68]. Holistic care does not signify what those factors are or how they are classified. Aristotle philosophy requires many interventions delivered by different organisations, including those outside normal healthcare [69]. The community based NCD services as intervention for improving the quality of life requires several interventions such as health promotion activities, community support systems and patient monitoring systems. These interventions are implemented by the VHTs and the community volunteers required the teams to integrate measures that improved all the aspects of life as commented by the great philosopher (Aristotle).

4. Theoretical Perspectives

The detailed analysis of community based NCDs services and quality of life adopted the two theories as highlighted below; socio-ecological and health belief theories. The theories are compatible with each other in explaining the effects of community NCD services on the quality of life of people living with HIV and NCDs receiving ARV services in the communities. The main theory that underpinned the review on the community based NCD services and QoL was the Socio-Ecological Model (SEM). The main proponent of the SEM is Urie Bronfenbrenner and was published in 1979. According to Bronfenbrenner [78] as cited by Dahlberg et al. [79], the model explains that individual actions and behavior (community based NCD services) are largely determined by the external environment within the social systems. The theory modifies the levels of risk as well as adding the stage or level of the disease epidemic [80]. The SEM states that failure of prevent and treat disease at individual level increases the risks for the spread of disease.

The higher order social and structural levels of risk (network, institution, community and policy) represent risk factors outside the control of any individual person [80]. Therefore, the SEM model emphasized that prevention of further damage of the disease (NCDs) affects at the individual, family, community, institutions and the government or Ministry of Health(MOH) at policy level. The concepts of the SEM are important in guiding the experimental design of the study, hence showing the application of the model in the current study. Therefore, socio-ecological model explains the individual, the family, community and policy on the utilization of the NCD services and the physical health domain of QoL, but does not explain health individual's perceptions and feeling which left a gap for the emotional and social relationship domains of the QoL.

Health belief model is an intrapersonal model that focuses on individuals' perceptions and thought processes prior to taking health-related action. People are more likely to take action if they believe [47]. The people are susceptible to the condition and it has serious consequences. Taking action would benefit the patients, and the benefits outweigh the harms [81]. They have the ability to successfully perform the action (self-efficacy). Rosenstock et al. [81] stated that these models consider things like peoples' knowledge, beliefs and attitude about health. The model could be used to explain the individual's perceptions and feelings on the utilization of the community based NCD services and the improvement in the quality of life.

5. Community Based HIV Services and NCD Prevention Gap in Uganda

The Ministry of Health, Uganda [82] HIV national treatment guidelines recommended health facilities both for the government and non-government organizations to establish collaborations with the existing community structures. Indeed, according to Mburu [83], the community structures are responsible for identification of positives, linkages to prevention, care and ART services, retention in care, viral load suppression as well as reduction in morbidity due to opportunistic infections. The community structures are used as precipitants to demand, uptake and continuous utilization of HIV prevention, HIV Counseling and Testing (HTS), care and treatment services in community.

According to Murugan [84], a community is social group of people sharing an environment normally with shared interests, beliefs, resources, preference, needs, risks, and a number of other conditions that may be present and commonly affecting the identity of the participants and their degree of cohesiveness. The services uptakes in the community setting are enhanced through community mobilization. In line with Kim-Ju et al. [85], community mobilization for health services as strategy enhances people in communities to use the health promotion services to improve the health outcomes. Therefore, the community based NCD strategy called for strengthening prevention, treatment of NCDs and avoid smoking and harmful use of alcohol. The key players in the community based HIV services included the expert client led groups, community based organizations and peer support groups [83]. Moreover, WHO [86] and Grismund [11] also recommended the lay workers or the expert clients as strategy to decongest the public health facilities in

resource limited settings to improve the QoL of patients at the community level.

The expert clients (lay counselors) are responsible for providing services are the Community Drug Distribution Points (CDDPs) and at individual and family level. The expert clients get ARV refills from the CDDPs to their fellow clients in homes. Each expert client takes care of about 10-20 clients [87]. However, all the services provided as per policy were based on HIV care alone without integrating NCDs. The other services provided by the expert clients(lay counselors) at the CDDP and in the communities according to Tsui et al. [88] and MOH [82] included; ART and TB adherence education and counseling, psychosocial support at community level, community-based follow up including phone calls by lay counselors to remind patients about appointments, community based tracking and follow up by lay counselors of those who do not keep appointment including loss to follow up and transfers, ongoing community based psychosocial support and counseling and linkage to support services.

Furthermore, according to Van der Heijden et al. [89], the use of client support groups to monitor and follow up patients on chronic treatment improved the physical health QoL in India. The study used the support groups in the public health facilities, hence, the need to use the same roles to test the efficacy in rural communities. The existing gap in the HIV community based services is the non-integration of NCD services both at the CDDPs and in the community groups in the various villages. According to Grimsrud [11], the community service delivery model of ART delivery does not include the prevention and the management of Non-Communicable Diseases (NCDs).

As commented by Nigatu [90], the NCD services integration was needed as strategic direction to streamline HIV and NCD services in communities as way to bridge the gap and improve the QoL of PLHIV. Therefore, the services such as; raising awareness of NCD risk factors, health promotion and risk reduction, detection and screening of NCD risk factors, referral for early treatment, behavior change counseling, link with social support, behavior change counseling, lifestyle change, treatment adherence, routine monitoring and self-management would be implemented as part of the routine services in all HIV services points [29]. Indeed, as noted by Narayan et al. [29], the needs of NCD and HIV programming often intersect, HIV accessible and affordable prevention services need to be integrated with NCDs services. Integration strengthens the capacity of health systems to address the full range of needs for HIV patients at the community [91].

6. Conclusions and Recommendations

Non Communicable Diseases (NCDs) have remained a threat and diseases of public health importance among patients with HIV due to aging with the disease and effects related to HIV its self and side effects of Anti-Retroviral(ARV)drugs. Therefore, there is need to come up with an integrated model or strategy to address HIV and NCD services in the community for improving the quality of life of PLHIV as recommended by the earlier scholars [92, 11, 27] .

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