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DISCOURSE ON NON-COMMUNICABLE DISEASES INTERVENTIONS IN GHANA (1990-2018)

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Author SAG designed the study, performed the analyses and wrote the first draft with the second and the third author of the manuscript. Author LT like the first author, designed the research and managed literature searches and analysis. Author KAB managed the analyses of the study. All authors read and approved the final manuscript.

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ABSTRACT

Non-communicable diseases (NCDs) such as cardiovascular diseases and diabetes are reported to have caused significant deaths for more than a decade. Consequently, NCDs have posed as a threat to the socio-economic well-being of individuals and families, contributed to a rise in healthcare costs and largely undermined the attainment of the Sustainable Development Goals (SDGs) especially in developing countries. According to the World Health Organization (WHO), the prevalence of NCDs have compounded the problem of already ill-equipped healthcare systems in these countries as they are faced with constraints to deal with the burden of both infectious and non-communicable diseases. Informed largely by the rapid increase in NCDs and their subsequent threat to public health, we aimed to ascertain the various healthcare interventions that Ghana has fashioned out in her bid to prevent and control the incidence of NCDs, how these interventions were rolled out and examined past and present barriers to their implementation since 1990. We culled the data gathered for this paper from both primary and secondary sources to construct a coherent synthesis and to facilitate discussions on Ghana's NCDs interventions from 1990 to 2018. A systematic analysis of the data gathered, revealed that Ghana's healthcare system has by far tackled the NCDs burden in two folds; the clinical care aspect and the health promotion aspect. While certain healthcare interventions were purposively directed toward addressing NCDs, others were directed at promoting healthy lifestyles but had a bearing on the prevention and control of NCDs. Present challenges concerning shortfalls in interventions are a reflection of unresolved challenges in the past. We argue that despite the significant strides made for more than two decades, the interventions have addressed the burden of NCDs with limited success given the trends in NCDs mortality and morbidity.

Keywords: Non-communicable diseases; healthcare interventions; prevention; control; barriers.

1. INTRODUCTION

Health constitutes an important aspect of the survival and sustainability of individuals as well as drives national development. The interference of diseases in the affairs of man has obviated the expected gains from health. In order to avert the disturbing impacts of ailments on individuals and socio-economic development, the means to prevent, cure and control diseases have been essential since time immemorial [1]. Consequently, healthcare constitutes a national and global agenda. Healthcare, as defined by Dermer and Montgomery involves all the goods and services intended to enhance health, comprising preventive,

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curative and palliative interventions, whether focused on individuals or populations [2]. This indicates that at the heart of healthcare are the forms of interventions, resources deployed and mechanisms adopted to meet the health needs of people. In this regard, stakeholders in health have, by possible means made spirited efforts to ensure that individuals stay alive and healthy. Regardless, the continued outbreak of infectious diseases and the emergent non-communicable diseases (NCDs) across the globe have militated against their progress.

For the past decade, NCDs have been increasing at an alarming rate in developing countries particularly, sub-Saharan Africa although the region continues to endure the burden of infectious diseases [3,4]. To that extent, the epicentre of NCDs known to be in the developed countries has gradually shifted to developing countries. Consequently, NCDs have posed a threat to the socio-economic well-being of individuals and families, contributed to a rise in healthcare costs and more importantly undermined the attainment of the Sustainable Development Goals (SDGs) especially in developing countries [5]. According to the World Health Organization (WHO), the prevalence of NCDs have compounded the problem of already ill-equipped health systems in these countries as they are faced with the constraint to deal with the burden of both infectious and non-communicable diseases [5].

The Disability Adjusted Life Years (DALYs) has been used as an approach to measure the global burden of NCDs. It encompasses an amalgam of Years of Life Lost (YLL), that is, years of life lost due to premature death and the Years Lived with Disability (YLD) [5]. In effect, the DALYs help to measure the extent of the disturbing incidence of NCDs. As reported by Juma, Juma and Yonga (2019), the reported rate of NCDs-related deaths in Africa from 2006 to 2015 stood at twenty-seven percent (27%). Similarly, Gouda and his collaborators examined the changes in the burden of NCDs in sub-Saharan Africa from 1990 to 2017 and found that the total Disability Adjusted Life Years (DALYs) due to NCDs between the period increased by sixty-seven percent (67%) [6]. In 2008, the WHO estimated NCDs to be "responsible for three (3) times as many DALYs and five (5) times as many deaths as infectious diseases, maternal, perinatal and nutritional diseases" [5]. Regarding same, NCDs were estimated to account for 80% of the global disease burden with 70% occurring in developing countries in 2020. Experts have also predicted a rise in NCDs mortality in sub-Saharan Africa [6].

Closer home, conditions such as stroke, hypertension, diabetes and cancers were reported to be among the top ten causes of death in at least each regional health facility in Ghana as at 2003 [7]. The recorded national outpatient hypertensive cases in 2005 summed up to 250,000 [7]. It has also been reported that the outpatient cases of hypertension in public and mission facilities other than teaching hospitals increased from about 60,000 cases in 1990 to about 700,000 cases in 2010 [8]. In 2008, a study by the World Health Organization (WHO) disturbingly revealed a higher prevalence rate of NCDs in Ghana than in the sub-Saharan African region [9]. According to de-Graft Aikins and Koram (2017), the top 25 causes of premature deaths included seven NCDs with stroke moving from the top 20th position to the 10th position between 1990 and 2010 respectively [10]. They indicated that in the same period, the top 25 causes of Disability Adjusted Life Years (DALYs) included eleven NCDs [10]. In 2012, Ghana's Ministry of Health (MoH) announced NCDs as contributing significantly to ill health in the country. Reporting on this issue, the Daily Graphic reported that the major causes of disability and deaths in Ghana have shifted from largely infectious diseases to both infectious and non-communicable diseases in the last few decades [11].

In Ghana, the major NCDs are grouped into five. They include cardiovascular diseases (CVDs), cancers, diabetes, chronic respiratory diseases and sickle cell diseases [8]. According to Atun et al. (2013), NCDs consist of a vast group of conditions but in terms of premature mortality, emphasis have been placed on cardiovascular diseases (CVDs), cancers, diabetes and chronic respiratory diseases (CRDs) [12]. The emphasis on these conditions is because they have contributed to the greatest share of the NCDs burden [4]. The shared risk factors peculiar to these conditions include; tobacco smoking, harmful use of alcohol, unhealthy diet and physical inactivity [8]. While some scholars relate these risk factors to the influence of social determinants of health and genetic factors, others have cited nutrition transition as the cause of the risk factors for NCDs [13,14,15,16, 17,18,19]. However, recent studies have drawn attention to the role of climate change in the rising burden of NCDs in sub-Saharan Africa [20,21]. These studies posit that climate-induced NCDs result from the repercussions of polluted air and chemical, drought, floods and extreme weather conditions. The implication of these studies is that, the healthcare interventions to mitigate the alarming rate of NCDs transcend issues pertaining to health to include several factors that lie outside the health environment.

Several studies have examined the burden and the national responses to NCDs in Ghana. However, these studies were limited in scope. Bosu (2012) explicitly

reviewed the national policy and programmatic responses to NCDs over the period 1992 to 2009 with focus on the achievements including challenges and recommended options available to deal with the NCDs in the country. He concluded that low funding and weak governance among others were the factors that hindered smooth implementation of proposed interventions. A decade ago, de-Graft Aikins, Boynton and Atanga (2010) discussed the challenges of developing effective primary and secondary interventions to tackle Africa's NCDs epidemic through an in-depth case studies of Ghana and Cameroon from 1990 to 2009 and concluded that both countries required a comprehensive and integrative intervention approaches. de-Graft Aikins (2007) charted a brief history of Ghana's NCDs burden with focus on prevalence, risk and illness experiences and nailed the point that Ghana needs an urgent, robust and sustainable intervention through a multidisciplinary approach.

In this study, we aimed to ascertain the various healthcare interventions that Ghana has fashioned out in her bid to prevent and control NCDs and how these interventions were rolled out as well as examine past and present barriers to their implementation since 1990. We used a qualitative research method to stitch together the fragmented data culled from both primary and secondary sources to present the findings of this contribution. The secondary sources on one hand include books and journal articles. The primary sources on the other hand include annual reports from the Ministry of Health (MoH), Ghana Health Service (GHS), international health organisations such as the World Health Organization (WHO) and documents from the Government of Ghana.

2. NON-COMMUNICABLE DISEASES INTERVENTIONS IN GHANA 1990-2018

The World Health Organization (WHO) defines healthcare intervention as an act performed for, with or on behalf of a person or a population whose purpose is to assess, improve, maintain, promote or modify health and functioning of health conditions [22]. In a similar context, healthcare interventions are envisaged to include innovations in a health system made up of new ideas, practices, objects or institutional arrangements [12]. These definitions anchor the fact that healthcare interventions must be able to respond to health challenges from the burden of diseases in order to improve upon and promote the well-being of individuals. Since its inception, countries have relied greatly on the WHO's global strategies and recommendations for managing diseases especially those that are considered as 'best buys'. This notwithstanding, responses to the NCDs burden have not been the same among countries. Primarily, interventions must respond to the social, economic, political, legal and physical environment including the institutional setting of the adopted region or country [3,4,23]. Thus, there is the need for local context implementation of interventions.

Ghana has developed a number of interventions in her bid to stem the alarming incidence of NCDs extending to the 1990s. The existing literature points to the early 1990s as the period when policy makers officially recognised NCDs as emerging public health challenge [7]. This implies that NCDs were found among the Ghanaian population just as infectious diseases before their recognition as a public health challenge. Referencing Addae (1996), de-Graft Aikins (2007) highlighted that cancer of the liver and sickle cell disease were recorded among the Asante communities in 1817 and 1866 respectively. Before the 1990s, medical reports from the Korle-Bu Teaching Hospital and other health centres in Kumasi, Secondi, Cape Coast, Tamale and Ho showed an increasing dominance of cardiovascular diseases (CVDs) [24].

The earliest known intervention was structural and featured the establishment of the Burkitt's Lymphoma Centre in the early 1970s at the Korle-Bu Teaching Hospital in an attempt to set up a cancer registry [25]. The Non-Communicable Disease Control and Prevention Programme (NCDCP) followed this in 1992 under the aegis of the Ministry of Health (MoH) [25]. The objectives of the programme were to reduce the incidence, morbidity, disability and prevent complications from NCDs, and to prolong quality life. Other functions of the NCDCP included planning, advocacy, training, coordination, research, health communication, development of clinical practice guidelines for NCDs including the mobilisation of resources for prevention and control [25]. Unfortunately, the NCDCP could not stand the test of time because of internal leadership problems and funding constraints to run its activities. An institutional response featured the University of Ghana Medical School when it developed a national diabetes treatment guidelines and trained individuals on diabetes care from 1995 to 1998 [25].

From 1995 to 2008, the then MoH proposed several policy initiatives with the aim to achieve its health targets within this period. In 1995, the MoH developed a strategy document and as part of its packages, included the treatment of major NCDs such as hypertension and diabetes [25]. Regardless, the specific healthcare strategies defined in the 'Ghana Vision 2020' document excluded the control of NCDs [25,26]. The 'Ghana Vision 2020,' drafted in 1993 encompassed long-term vision for growth and

development of the country [26]. Among the nation's areas of priority as enshrined in this document included the improvement in the health and productive lives of Ghanaians [26]. The authors for this contribution independently reviewed the health sector's performance from 1997 to 2006 and found that the reports hardly mentioned NCDs or proposed any recommendations for their prevention and control [27,28,29]. We infer that the health sector's activities within this period were geared towards achieving the Millennium Development Goals (MDGs), which placed little or no emphasis on NCDs as compared to the Sustainable Development Goals (SDGs). This notwithstanding, NCDs have featured greatly in the health sector's annual programme of work since 2012 [30,31,32].

As reported by Bosu (2012), the national responses to the burden of NCDs include the development of draft policy and programme documents, the activities of the Ghana Diabetes Advisory Board (GDAB) inaugurated in 1994, the implementation of diabetes management programme, screening programmes for cancers and sickle-cell disease as well as the activities of Non-Governmental Organisations (NGOs) [25]. Undoubtedly, the role of health NGOs in promoting the health and well-being of Ghanaians cannot be overlooked in the medical history of the country. To that extent, the activities of some early NGOs like the Red Cross among others have had significant ramifications in the health sector especially in health promotion activities [33].

In order to create awareness of the prevalence of NCDs, regular celebrations of NCDs-related activities such as the World Tobacco Day (WTD) have taken place at the national level since 2002 [25]. The significance of these celebrations deserves to be assessed to ascertain their effectiveness, efficiency and role in fighting NCDs. In 2010, the Ghana Health Service (GHS) and other stakeholders in health carried out several health promotion activities. Key among them includes; the celebration of world and national events on tobacco, diabetes, cancer and sickle cell disease. To create awareness, press releases on cancer and healthy lifestyles, the launching of "Good Life. Live it Well" campaign with support from the John Hopkins University were very useful [34]. There was also the acquisition of a Government of Ghana (GoG) loan of US$700,000 to support cancer screening activities such as early detection, palliative care and the provision of Human Papilloma Virus (HPV) vaccination at Ridge Hospital in Accra [34]. The misunderstanding of health conditions has for a long time militated against the efforts to fight diseases particularly NCDs in sub-Saharan Africa [4]. To that extent, health promotion has proved to be one of the effective intervention strategies for the fight against the rising burden of NCDs. Essentially, health promotion activities in managing NCDs does not only make interventions effective but also sustainable [4]. With recourse to the fact that interventions must subject to local context and conditions, health promotion activities should also tow the same path in order to achieve the desired result. As indicated by Winham, paying attention to health promotion interventions that are meaningful and culturally relevant to individuals helps to mitigate the risk of developing risk factors for NCDs [13]. He argued that although experts have embarked on series of diet-related health promotion activities, such knowledge, in part, did not inure to the adoption of health-preserving behaviours.

By the year 2002, the GHS and private stakeholders had embarked on health walks in all regions of the country to promote healthy living [35]. In 2003, a Newborn Screening for Sickle Cell Disease (NSSCD) project took place in Kumasi to enhance screening services for sickle cell disease. In June 2005, the Ghana Health Service (GHS) held a stakeholders' forum on the integrated prevention and control of NCDs when it recognised the need to speed up efforts to combat NCDs [36]. By the close of 2005, a draft National Health Promotion Policy (NHPP) had been developed to scale up collaboration between the GHS, its partners and stakeholders. Three years after its completion, the GHS and the MoH launched the NHPP in Accra [37]. The NHPP aimed at providing a framework for health development and practice. In 2006, the need to encourage the practice of healthy lifestyle among Ghanaians led to the creation and establishment of the Regenerative Health and Nutrition Programme (RHNP). In 2012, the then minister for health, Alban SK Bagbin revealed that the RHNP forms an integral part of NCDs control. He echoed that it was in recognition of the impact of NCDs on public health that "the Ministry of Health introduced the Regenerative Health and Nutrition Programme (RHNP) in 2006 and developed a health policy which clearly prioritizes the promotion of healthy lifestyles and healthy environments and the provision of health and nutrition services" [8]. By 2010, the GHS had carried out several educational campaigns through the mass media on regenerative health [34].

In her evaluation of the RHNP, de-Graft Aikins described this intervention as timely and related it to similar public health policies that were being adopted across the globe [14]. Among the findings of her evaluation was the fact that majority of individuals in the study communities were not willing and ready to accept a reduction in their meat consumption on the

basis of social status. Based on this, those who had low intake of meat were labelled as 'stingy' and 'miser'. She further identified the challenges to the adoption of healthy lifestyles through the RHNP to include; the availability of regenerative health and nutrition products, affordability of product informed by socio-economic status and the quality of products [14]. The marginalisation of people with small-body-size (low Body Mass Index (BMI)) as suffering from severe ailments such as HIV/AIDS has led to the perception that gaining weight means being well and healthy [3]. With regards to the above, Nyirenda hinted that,

> with access to food, a major daily challenge in most parts of sub-Saharan Africa, a larger body size is perceived as a sign of affluence and good living and is a deeply rooted status symbol conferring respect, influence, health and attractiveness [3].

As part of the efforts to regulate the use of tobacco, the Food and Drugs Board (FDB) now the Food and Drugs Authority (FDA) in 2005 presented a draft tobacco bill to the cabinet [25]. Before the draft tobacco bill, Ghana had ratified the World Health Organization's (WHO) Framework Convention on Tobacco Control (FCTC) on 29th November 2004 being the 39th country to do so [38]. However, the country enforced the FCTC on 27th February 2005, the year that the convention became an international law [38]. To scale up the intervention on tobacco products, Ghana passed the Public Health Act, 2012 (Act No. 851 of 2012) which contained a consolidation of nine separate public health laws including a series of tobacco control measures like bans on all tobacco advertisements, promotion and sponsorship [39].

In 2002, 2006 and 2007, a draft national policy framework for NCDs prevention and control was prepared [25]. It must however be noted that from 2006, measures were put in place for the treatment of some NCDs conditions such as hypertension, diabetes and cancer. These were to be included in the National Health Insurance Scheme (NHIS) benefits package [16]. As at 2010, strategic documents on Sickle Cell Disease (SCD) and cancers were on the verge of completion while major stakeholders held consultative meetings to consider policy guidelines on breast cancer management in Ghana [34]. In the same way, a draft document on strategic framework to control and manage NCDs was completed in addition to the formation of a working group on alcohol policy. In 2011, the GHS completed a draft of the national NCD policy and strategy documents as well as SCD and cancer strategy plan with support from the West African Health Organization (WAHO) [40]. By 2014, both the NCD policy and strategy documents had been finalised but were launched only in 2016.

Significantly, in the attempt to expand World Health Organization's Package of Essential Non-communicable (WHO-PEN) sites in the country, the GHS with support from the WHO established diabetes and hypertension clinics at Akuapim [41]. In 2016, Ghana inaugurated an advisory committee for the Accra cancer registry at Korle Bu Teaching Hospital as well as a national NCD multi-sectoral committee to perform NCD-related activities toward prevention and control [42]. In the same year, the NCD programme of the GHS and Marie Stopes International Ghana (MSIG) trained some selected midwives from Marie Stopes on cervical cancer screening to enhance human capacity. In line with cervical cancer screening, the GHS formed a technical working group to coordinate the establishment of ten screening sites [42]. In June 2018, the Minister of Health led a delegation to open a specialist health centre that aimed at offering NCDs care in Tema [11]. These interventions were geared toward strengthening the health system and improve its capacity to adopt primary healthcare. Contemporary studies have placed primary health care (PHC) at the forefront of addressing NCDs especially at the point where multi-sectoral and health system strengthening are required [4,7,16,43,44]. Significantly, primary health care helps to address the health needs of populations and allows individuals and their community to take charge of their own health [43].

On 16th March 2017, the Ministry of Health launched the National Alcoholic Policy (NAP) in Accra as part of the efforts to regulate the production, distribution, sale, advertisement and consumption of alcohol [45]. The MoH launched the policy in collaboration with the WHO and the Baraka Policy Institute (BPI). The rationale behind the policy was to reduce the negative impact of alcohol consumption on Ghanaians including the development of NCDs. In this regard, the Food and Drugs Authority (FDA) initiated a ban on the advertisement of alcoholic beverages in the media before 8pm in 2018 [46]. This directive aimed at protecting and preventing children from being lured into alcoholism. Prior to this directive, the FDA had banned celebrities from advertising alcoholic beverages after recognising their impact in the country. Surveys conducted in Ghana, Burkina Faso and South Africa revealed grave consequences that false claims in advertisements on drugs and food have had on the prevention and control of NCDs [5]. These adverts portrayed only the positive components of certain foods and drugs while silent on the negative side effects. In such instances, people were ill

informed about the health issues of the products they consumed. Thus, they were unable to make well-informed judgments regarding their health [5]. Corresponding to this, Rother opined that, "if NCDs in sub-Saharan Africa are to be reduced, then the role of advertising requires more scrutiny, stringent review and control" [20].

Despite the efforts made over the years, the interventions have failed to keep up with the pace at which NCDs continue to rise in the country given the trends in morbidity and mortality. This notwithstanding, current efforts are better now than before. More opportunities exist for the country to implement cost-effective and locally informed interventions for the prevention and control of NCDs.

3. BARRIERS TO NON-COMMUNICABLE DISEASES PREVENTION AND CONTROL: PAST AND PRESENT

Ghana's response to the burden of NCDs has scaled up over the years. Comparatively, there has been an increasing response as well as efforts now than before as far as the control and prevention of NCDs is concerned. Regardless, several barriers have militated against these efforts. The major and persistent barriers have been low political will, limited access and inequities, limited funding, persistent rise in risk factors, weak surveillance and research [47]. In addition to the above, there are issues concerning general awareness on NCDs, national diagnostic and screening programmes, palliative care, treatment guidelines for NCDs and counselling services at health facilities [40]. We identified other challenges. They include; lack of knowledge about uptake and related issues on traditional medicine, poor dissemination of intervention strategies, prioritisation of NCDs in health and political agendas, weak legislation and law enforcement.

The Strategy for the Management, Prevention and Control of chronic NCDs in Ghana has reported low political interest [47]. This strategy document contained sets of actions, which the MoH envisaged as the main strategies to help mitigate the burden of NCDs between 2012 and 2016. As reported in the document, NCDs programmes geared toward the prevention and care received low funding from government's health sector budgets on one hand. On the other hand, development partners also showed less resilience partly because of minimal prioritisation of or no interest in NCDs. The strategy document also captured low awareness on the causes, effects and therapeutic measures on NCDs among the public and even health care workers [47]. A study conducted by Binka et al. (2019) on the uptake of cervical cancer screening and treatment also revealed similar barriers [48]. This in part, could be attributed to the fact that there has not been enough on health promotion activities. There is also the issue of weak chain of disseminating NCDs interventions and guidelines among health personnel resulting in limited knowledge on NCDs management. According to our expert informant, the education on NCDs has not been enough. There is also limited diffusion of new interventions to the reach of the entire workforce in various health facilities. In this regard, he hinted; "The education on NCDs is not enough. We don't have adequate health promotion activities on NCDs, even though we are doing our best" [49].

Inadequate access to screening services and specialised care continue to serve as bottlenecks in the prevention and control of NCDs. As of 2012, there was no organised screening for cancers in the country [47,48]. Although screening and specialised clinics exists in the country, they are not accessible to majority of Ghanaians especially those in the rural areas [48]. Regarding this, scholars such as Juma, Juma and Yonga have stated that, the curative-based health care systems in Africa impede their capacity to effectively control and manage NCDs [4]. In sub-Saharan Africa, chronic care management has largely been the responsibility of specialists, notably physicians. Taking into consideration the density and distribution of healthcare personnel particularly, the inadequate number of specialists, there is the need to adopt a task-shifting mechanism in the management of non-communicable diseases [50]. Lekoubou and his collaborators have defined task shifting as

> a situation where a task normally performed by a physician is transferred to a health professional with a different or lower level of education and training, or to a person specifically trained to perform a limited task only, without having a formal health education [51].

Essentially, task-shifting has proved effective and successful in the management of several diseases such as HIV/AIDS, tuberculosis and NCDs [51]. It has also been feasible in mother and child health care.

Another barrier that appeared to be beyond the reach of medical care has to do with the persistent rise in the risk factors for NCDs [47]. This is mostly associated with the change in lifestyle practices that have taken root in the country at the turn of the twentieth century. Similarly, contemporary agricultural practices such as the use of artificial fertilizers, pesticides and chemicals on food crops have compounded the problem [19]. Adding to this, Rother gave an insight into how the use of pesticides and other chemicals is

expected to increase with aim of increasing food production in order to fulfil the target 2.4 of the Sustainable Development Goal 2 [20].

Historically, the fragile health systems in sub-Saharan African countries including Ghana have been attributed to the deficiency in surveillance and data management [4,6,52]. In spite of the available statistics on the burden of NCDs in sub-Saharan countries, recent commentaries contend that the burden is unclear because of the paucity of population level data on the patterns and burden of diseases [4,6, 53]. Policy makers in Ghana have indicated that, reports on NCDs and other diseases in general in the various healthcare facilities are mostly incomplete [47]. Thus, data on NCDs are either under reported or are overly reported. Because of this, there was no systematic risk factor surveillance. Our expert informant elaborated on the challenge with data from various health facilities. In response to a question concerning the vagaries in the morbidity and mortality rate in NCDs, he reported:

> Normally, we want to document new and old cases differently but sometimes you'll go to some facilities and when they are giving the report for the month, they mix them. Other times too, they will give you only the new or only the old [49].

Significantly, there has been little or no evaluation of NCDs interventions at scale. The national assessment of health care delivery services in various health facilities excluded NCDs until recently [13]. For instance, reports on the Health Sector Programme of Work from 1997 to 2015 revealed a focus on infrastructure, child health, family planning, maternal health services, and services for communicable diseases specifically sexually transmitted infections (STIs) including HIV/AIDS.

3.1 The Question Concerning the Role of Traditional Medicine (TM)

Historical records have shown that traditional medicine (TM) has served Ghanaians long before the services of orthodox medicine. It constituted the sole provider of healthcare services to the people prior to the introduction of Western or orthodox medicine [54,55]. However, TM for the past years has been regarded as a challenge to NCDs prevention and control [25,56]. The argument of TM as a challenge to NCDs management is partly related to the fact that practitioners possess little or no knowledge on NCDs. Our expert informant was apt in pointing out that, traditional medicine is one of the challenges because it pollutes people's mind and hinders them from adhering to the education that orthodox healthcare professionals give to them. He added that, practitioners of TM use the media outlets to propagate falsehood on NCDs and that they overwhelm advocacy. In response to the question: In your view, what are some of the challenges to the national responses to the prevention and control of NCDs? He hinted that:

> I think the role of traditional medicine practitioners is one. They influence people not to comply with the education we are giving to them. I went to Accra and my in-law was not well, so I decided to go and see him and he showed me something he bought in a car. When you look at it, on it they have written for waist pains, ulcer, cancer…I mean all these things. What is the basis that it can heal all these things? They even talk about malaria and typhoid. So if you have done a little science, you will see that how can this be? We should not convince people to patronize such medicines and practitioners who are quacks [49].

In the same way, he highlighted on the implication of TM on early detection and clinical care for people at risk of and living with NCDs. Concerning same, our expert informant hinted:

> There are some people once they hear someone talking on radio, they swallow hook, line and sinker because they think it is always the truth. So, once the person hears it, why should he go and join long queues at the hospital when he knows that he can access medicine from any joint with less hustle and challenges. I have personally seen and heard on television when a so-called practitioner asserted that if you contract gonorrhoea and you don't treat it, it will turn to syphilis and it will later turn into HIV. This is very absurd and we should do something about it [49].

This notwithstanding, TM forms an integral part of Ghana's healthcare system hence, constitute a national asset and could supplement biomedicine through training, research and an understanding of the specific role of TM in providing NCDs care. Contemporary studies contain wealth of information and evidence on the use of traditional medicine particularly plant medicine to treat and manage common ailments and specialised diseases such as NCDs in sub-Saharan Africa including Ghana [54,57,58,59,60,61].

4. CONCLUSION

In this paper, the authors have attempted to ascertain the efforts that Ghana has made toward addressing the

burden of NCDs by looking at several existing healthcare interventions from 1990 to 2018. The country's efforts extend to the 1990s after policy makers recognised NCDs as a threat to public health and the well-being of Ghanaians then, and in the future. The healthcare system in Ghana has tackled the NCDs burden in two folds; the clinical care aspect (related to strengthening of health system hence, structural interventions) and the health promotion aspect (evident in policy and programmatic responses). Whereas certain healthcare interventions were specifically adopted for the prevention and control of NCDs, others were directed at the promotion of healthy living but had a bearing on the prevention and control of NCDs. Comparatively, there has been an increasing response now than before. On the barriers to NCDs interventions, present challenges concerning shortfalls in interventions are a reflection of unresolved challenges in the past. As evident in the strategy and policy documents and reports on NCDs, policy makers are not oblivious of the challenges to the responses. Notwithstanding the efforts made over the years, we argue that the interventions have addressed the burden of NCDs with limited success given the trends in NCDs mortality and morbidity over the years. We hope that this contribution sheds some light for the future concerning the need for further pragmatic efforts to deal with NCDs in Ghana with wider ramifications on the African continent.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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