

COMMENTARY

Ghana's neglected chronic disease epidemic: a developmental challenge

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ABSTRACT

This paper charts a brief history of Ghana's chronic disease burden over the last fifty years, focusing on prevalence, risk and illness experiences. Two arguments are made. First, chronic diseases in Ghana constitute public health and developmental challenges, requiring the same intellectual and financial commitments afforded to communicable and infectious diseases such as malaria and HIV/AIDS. Second, to understand and respond to the multifaceted roots and consequences of chronic diseases, research, interventions and policies have to be informed by multidisciplinary - biomedical and social science - collaborations.

Key words: chronic disease, development, Ghana, multidisciplinary research.

INTRODUCTION

If HIV, with a national prevalence of 3.2%, constitutes a Millennium Development Goal challenge and commands multi-million dollar funding from Ghana's development partners, why is hypertension, with a national prevalence of 28.7%, ignored?^{1,2} If health policymakers recognize that chronic diseases such as hypertension, stroke, diabetes and cancers have become significant public health problems why does Ghana not have a chronic disease policy or plan?^{3,4,5} If experts know that chronic diseases have complex causal factors and consequences why are research and interventions still dominated by a biomedical model?⁵

The gap between formal recognition of a public health problem and health systems change in Ghana and many African countries is often vast and complexly mediated; the politics of governance and donor activity, for instance, can hasten or prolong institutional action. Within the context of chronic disease in Ghana, the gap is sustained by at least two problems. First, there is a dominant assumption among expert and lay communities that chronic conditions are rare or that they do not pose significant public health challenges compared to communicable diseases. Second, Ghana's health system is not only structured for treating acute communicable diseases, but it also operates with inadequate

financial and human resources. These problems undermine the ability to address the double burden of communicable and non-communicable diseases. In this paper I chart a brief history of Ghana's chronic disease burden, focusing on prevalence, risk and illness experiences. Through this history I aim to demonstrate that Ghana, like other African countries, faces a chronic disease epidemic and that chronic diseases pose public health and developmental challenges similar to challenges posed by malaria, tuberculosis and HIV.^{6,7,8} I argue, like regional and international commentators on Africa's chronic disease burden, that robust and sustainable interventions are urgently needed and have to draw on both medical and social science expertise.^{9,10,11}

Ghana's chronic disease burden: available evidence *Prevalence, morbidity and mortality*

Chronic diseases have a longer history in Ghana than is usually thought. Cancer of the liver was recorded in 1817 Asante communities; sickle cell disease was described in 1866.¹² Cases of stroke were presented and treated at Korle-Bu hospital when it opened in the 1920s.¹³ Between the 1920s and the 1960s data gathered from Korle-Bu hospital showed a steady increase of stroke and cardiovascular diseases.¹³ Hospital-based and community-based studies conducted since the 1950s provide important information on prevalence and morbidity trends for hypertension, diabetes, cancers and sickle cell disease.

Diabetes prevalence studies in southern Ghana have recorded a steady increase. The earliest studies in the 1960s recorded 0.2% prevalence in a population of men in Ho.¹⁴ Diabetes screening conducted by the Ghana Diabetes Association in the early 1990s suggested 2-3% prevalence in urban areas in southern Ghana; in the late 1990s a prevalence rate of 6.4% for diabetes and 10.7% for impaired glucose tolerance (IGT) was recorded in a community in Accra.¹⁵ At Korle-Bu hospital, the percentage of medical admissions due to diabetes increased almost two-fold from 3.5 in the mid-1970s to 6.4% in the mid-1980s.^{16,17}

Table 1 Top 10 in-patient causes of death in 32 sentinel hospitals in the 10 regions of Ghana, 2003.

	WR	CR	GAR	VR	ER	AR	BAR	NR	UER	UWR	Ghana
1	malaria	malaria	malaria	stroke	malaria	malaria	sepsis	malaria	malaria	malaria	malaria
2	anaemia	anaemia	stroke	malaria	anaemia	neonatal condition	malaria	anaemia	pneumonia	anaemia	anaemia
3	pneumonia	pneumonia	anaemia	anaemia	stroke	typhoid fever	pneumonia	pneumonia	anaemia	pneumonia	pneumonia
4	hepatitis	stroke	pneumonia	pneumonia	pneumonia	stroke	stroke	diarrhoea	meningitis	diarrhoea	stroke
5	HPTN	HPTN	cardiopathy	cardiopathy	HPTN	anaemia	HIV/AIDS	convulsions	TB	hepatitis	typhoid Fever
6	stroke	diarrhoea	HPTN	sepsis	diarrhoea	hepatitis	hepatitis	typhoid fever	typhoid fever	meningitis	diarrhoea
7	diarrhoea	neonatal	typhoid fever	TB	cardiopathy	pneumonia	anaemia	meningitis	hepatitis	typhoid fever	HPTN
8	typhoid fever	typhoid fever	diarrhoea	RTA	diabetes	diarrhoea	liver disease	neonatal condition	stroke	convulsions	hepatitis
9	cardiopathy	renal disease	liver disease	cancer	sepsis	TB	cancer	hepatitis	abdominal colic	malnutrition	meningitis
10	injuries	sepsis	typhoid fever	anaemia	TB	liver disease	cardiopathy	RTA	liver disease	HIV/AIDS	sepsis

(Source: W. Bosu, 2007). HPTN=Hypertension, RTA=Road Traffic Accidents, TB=Tuberculosis

Top row indicates the 10 regions in Ghana: Western(WR), Central (CR), Greater Accra (GAR), Volta (VR), Eastern (ER), Ashanti(AR), Brong-Ahafo (BAR), Northern (NR), Upper East (UER) and Upper West (UWR)

In the 1970s, the World Health Organisation (WHO) sponsored Mamprobi Cardiovascular Disease (CVD) study recorded hypertension prevalence of 13% in the community.¹³ A non-communicable disease survey conducted in 1998 recorded a national prevalence of 27.8% for hypertension.⁵ Studies conducted after the national survey show higher prevalence rates across different groups in different regions: 28.7% in Kumasi in the Ashanti Region; 32% prevalence in Bawku/Zebilla in the Upper East Region; 36.9% in Keta-Dzelukope in the Volta Region; and 47.8% among a cohort of women in Accra.^{13,18,19} Reported facility cases of hypertension increased by 67 per cent, from 58,677 in 1989 to 97,980 in 1998.¹⁵ In 2005, national out-patient hypertension cases totaled 250,000.⁵

During the same period (1950s to present) major causes of death have shifted from solely communicable diseases to a combination of communicable and chronic non-communicable diseases. In Accra, cardiovascular diseases rose from being the seventh and tenth cause of death in 1953 and 1966 respectively, to becoming the number one cause of death in 1991 and 2001.²⁰ By 2003 at least four conditions – stroke, hy-

pertension, diabetes and cancer – had become one of the top ten causes of death in at least each regional health facility (see Table 1).

Risk factors

Hypertension and obesity are major risk factors for chronic diseases. Childhood obesity has increased 3.8 fold from 0.5% in 1988 to 1.9% in 1993/94.²¹ The Ghana Demographic and Health Surveys (DHS) demonstrate that prevalence of obesity or overweight among adult (non-pregnant) women across the country increased 2.5 fold in ten years from 10% in 1993 to 25.3% in 2003.²² Crucially, the 2003 DHS data shows that *there are more obese women (25.3%) than malnourished women (9%)*. The DHS data is supported by a 2003 WHO sponsored national obesity survey which showed higher obesity rates in southern compared to northern regions, among women compared to men, among married individuals compared to unmarried and among older compared to young individuals.²³ In both national studies Greater Accra Region had the highest overweight and obesity rates and women constituted a high-risk group.

The Accra Women's Health Study, a project conducted by the Schools of Public Health of Harvard University and University of Ghana in 2003 reported that 65.9% of a cohort of 3200 women, were overweight and 6.1% were morbidly obese.¹⁹ A relationship between obesity and pregnancy-related complications and deaths has been reported.²⁴ Like global reports on obesity, increasing obesity rates in Ghana are linked to urbanization, modernization, affluence and changing lifestyles (in

with chronic disease in Ghana.^{33,34,35,36,37} First, these conditions pose physical challenges: experiences range between minor physical ailments to severe physical disabilities. These physical challenges have psychological implications (coping with pain and its management, dealing with disrupted lives and identities) as well as concrete impact on mobility and productivity.³³ In a 1981 assessment of the health impact of various diseases in Ghana, ranked in order of healthy days of

Box 1. Cost of Diabetes Care in Ghana, 2001, 2007

Cost of diabetes care, 2001

- Controlling one case of diabetes a year^a: \$180 - \$420
- Dialysis per person per year^a: \$9,000
- Renal transplant^a: \$60,000
- In rural Nkoranza monthly cost of insulin in 2001- c60, 000 (\$6.6) to c90,000 (\$10) (40% - 60% of monthly income of the average farmer)³³
- Minimum daily wage (2001) - c11,200 (\$1.2)

Cost of diabetes care, 2007

- Controlling one case of diabetes per month^b: GH100 (\$106) – GH600 (\$638)
- Controlling one case of diabetes per year^b: GH1200 (\$1276) – GH7200 (\$7660)
- Dialysis per person per year: GH300/week x 52 weeks – 156,000,000 (\$16,600)
- Average Monthly salary of civil servants (high risk groups for diabetes) – GH200 (\$213)
- Minimum daily wage (2007) – GH1.9 (\$2)

Sources: ^a Teprey, G. *NCD Programme 2001 Report*, 2001. (Unpublished); ^b Amoateng, K, Acheampong, L.K, Addo-Danquah, A. et al, *Living with mental illness*. 2007, UGMS Senior Clerkship Project (Unpublished). Both reports are based on Korle Bu Hospital statistics and patient accounts.

particular sedentary occupations and consumption of a wider diversity of local and foreign foods).^{25,26,27,28,29} The urban wealthy are not the only high risk groups for chronic diseases in Ghana. Poverty appears to be a risk factor for both communicable and non-communicable disease. There is growing evidence that some infectious diseases precipitate chronic diseases and that some chronic conditions place sufferers at risk of infectious diseases.^{13,30} Since the 1970s studies in poor communities in Accra have demonstrated stronger co-existence of communicable and non-communicable diseases compared to wealthier communities.^{13,20,31} These communities are also likely to suffer complications of, and die prematurely from, chronic diseases because they lack access to quality healthcare.³²

Living with chronic disease

There are fewer studies of chronic disease experiences compared to epidemiological studies. However existing work on experiences of diabetes, cancers, sickle cell disease and childhood chronic diseases build a consensual picture of the complex challenges of living

life lost per 1000 persons per year, researchers found 17,500 days of healthy life was lost through sickle cell disease, 10, 400 days to cardiovascular disease and 5,100 days to hypertension.⁵ Secondly these conditions pose economic challenges. Treating chronic disease in Ghana is expensive. Without health insurance, managing a condition such as diabetes can cost more than the average individual earns (see Box 1). The economic impact of chronic diseases for individuals has a knock-on impact on their family livelihood and relations, as well as their long-term treatment choices. A rural-urban study of diabetes experiences showed that many poor rural men and women with diabetes often relied on financial support from their immediate and distant family members.³⁴ This dependence on family members who themselves were financially insecure caused family tensions and frictions, which in some cases led to family abandonment and social isolation. Healer-shopping within ethnomedical and faith healing systems were often a by-product of the high cost of biomedical treatment.

Finally, chronic conditions such as cancer and diabetes appear to be stigmatized. Reports suggest that some women living with both conditions are abandoned by their partners.^{38,39} Rural individuals living with uncontrolled diabetes - which leads to rapid and extreme weight loss - face the risk of, or experience, HIV/AIDS-related stigma.³⁸ For disease stigma researchers, the multiple burdens evoked by stigma constitute a human rights problem that requires rights-based interventions.^{40,41,42}

Chronic disease and development in Ghana: current responses and future challenges

Over the last fifty years there has been a documented increase in prevalence rates of chronic diseases such as CVD, hypertension and diabetes in Ghana. This paper has presented evidence on the relationship between these conditions and broader developmental concerns such as poverty and women's (reproductive) health.⁴³ The evidence supports a growing global call for incorporating chronic diseases - such as CVD, respiratory diseases and diabetes - more explicitly into the MDGs.^{44,45} There is a global consensus that the causes and consequences of chronic diseases are complex.^{6,7,8}

This paper has demonstrated that medical, psychological, socio-cultural, economic and structural factors are all implicated in Ghana's chronic disease burden. Yet conceptual and practical responses to Ghana's chronic disease burden have been largely biomedical, with primary emphasis on epidemiological and clinical activities. Despite recognition of a growing chronic disease problem, chronic diseases are "neglected, constitute low policy priority and receive low interest from development partners".⁵ Ghana, like several African countries, is yet to develop a chronic disease plan or policy.^{4,5} The current research, practice and policy situation regarding chronic diseases is detrimental to Ghanaian public health.

The WHO (2005) suggests that the global chronic disease burden requires 'multi-faceted multi-institutional' responses. With respect to the content of responses experts recommend a three-prong approach that amalgamates epidemiological surveillance, primary prevention (preventing chronic disease in lay healthy communities through health promotion) and secondary prevention (preventing complications and improving the quality of life of people with chronic disease through medical, psychosocial and/or economic interventions). With respect to the structure and agents of responses, experts recommend: (1) interdisciplinary research that addresses the multi-faceted roots and consequences of chronic disease; and (2) innovative interventions that

make efficient use of existing economic and human resources.

Future responses to Ghana's chronic disease burden will have to be informed by these recommendations. Two promising local developments are worth highlighting in conclusion. The Non-communicable Disease Programme (NCDP), established in 1992, is charged with developing research and intervention for conditions of public health significance such as CVDs, diabetes, chronic respiratory diseases and sickle cell disease. Crippled by lack of funds, it operates with few - and exclusively biomedical - staff. However, it advocates a 'public health approach' rather than a 'clinical approach' to the chronic disease burden, and acknowledges the importance of social science perspectives and expertise for its activities.⁵

In 2005, the Ministry of Health (MOH) announced a paradigm shift from curative to preventive services and has since spearheaded a Regenerative Health and Nutrition (RHN) Programme that aims to empower lay communities to adopt healthy lifestyles.^{46,47} While the RHN programme is in its early pilot stages and is not explicitly informed by the chronic disease burden, the broader paradigm shift is driven by recognition that Ghana's disease burden undermines its developmental goals. Both the NCDP and the MOH's paradigm shift can offer concrete opportunities for 'multi-faceted multi-institutional' interventions by facilitating partnerships between health researchers and practitioners from multidisciplinary backgrounds, lay communities and health policymakers. Such interventions are urgently required to reduce risk, morbidity and mortality for a growing number of Ghanaians affected by chronic diseases.

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