

LAY REPRESENTATIONS OF CHRONIC DISEASES IN GHANA: IMPLICATIONS FOR PRIMARY PREVENTION

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SUMMARY

Background: Ghana's health system is ill-equipped to tackle the country's double burden of infectious and chronic diseases. The current focus is on empowering lay communities to adopt healthy practices to prevent chronic diseases. Understanding how individuals make sense of health, illness and chronic illnesses is an important first step to developing practical interventions.

Methods: Six focus group discussions with lay people (N= 51) in Accra, Nkoranza and Kintampo to explore: (1) knowledge of prevalent chronic diseases in Ghana; (2) chronic disease causal theories; and (3) chronic disease treatment.

Results: Nineteen conditions were listed cumulatively. Diabetes and hypertension were listed by all groups. Rural groups included HIV/AIDS on their list as well as diseases with alleged spiritual roots, in particular epilepsy and sickle cell disease. Multiple causal theories were presented for diabetes and hypertension; cancers were attributed to toxic foods; asthma attributed to environmental pollution. Biomedical care was preferred by the majority. Lay representations were drawn from multiple sources: medical professionals and chronically ill individuals were the most legitimate knowledge sources.

Conclusion: This study provides insights on how lay representations of common chronic diseases and their major risk factors provide public health specialists with the conceptual tools to develop primary prevention strategies. The first challenge will be to train health experts to provide accurate information in practical language that lay people can understand and apply to their daily lives. A second challenge will be to develop sustainable behaviour-change interventions. Best practices from other African countries can inform interventions in Ghana.

Keywords: lay representations, chronic diseases, primary prevention, lifestyle modification, Ghana

INTRODUCTION

Ghana has a serious chronic disease burden. Like other global contexts, the rise in chronic disease prevalence morbidity and death has been attributed to urbanisation, the nutrition transition and effects of globalisation.^{1,2} The problem is compounded by a formal health system that lacks adequate financial and human resources to tackle chronic diseases and a traditional and alternative health system that provides unregulated chronic disease care.^{3,4,5}

Identified service delivery problems include a lack of guidelines for chronic disease care, erratic supply of essential drugs and basic equipment at health facilities and poorly trained health care professionals with insufficient knowledge on common chronic diseases.^{6,7,8,9} Community prevalence surveys show that a significant proportion of people with hypertension and diabetes do not know they have these conditions.^{10,11} Research also shows that management and self-care is poor among people with diabetes and cancers, and healer-shopping between medical systems is common.^{5,12,13} Poor medical, ethnomedical and faith healing practices are implicated in poor self-care.⁵

While diabetes, hypertension and other chronic diseases have been prioritised in official policy documents since the early 1990s, policy recognition has not translated to concrete action.^{11,14} Ghana has no chronic disease policy or plan.¹¹ Calls have been made for increased research on the 'psychosocial' determinants of chronic diseases, on a public health approach to prevention, and robust policy interventions.^{4,5,6,12}

These local perspectives mirror regional proposals for addressing Africa's chronic disease burden. Experts recommend a three prong intervention approach consisting of epidemiological surveillance, primary prevention (preventing chronic disease in lay healthy communities) and secondary prevention (preventing

complications and improving the quality of life of people with chronic disease).¹⁵ Prevention and quality of care require strong public health and medical services as well health literate populations. Because African health systems are insecure and exacerbate the daily burden of living with disease, there are increasing calls to empower communities to engage in healthy lifestyles and practices to stem the rising prevalence of chronic diseases and the threats of complications, disabilities and death.^{16,17} Understanding the way lay communities make sense of health, illness and chronic illnesses is crucial to this process.

This study examined lay representations of chronic diseases among rural and urban Ghanaians and the implications of these representations for primary prevention. It focused on two empirical areas:

1. Knowledge of prevalent chronic diseases in Ghana; and
2. Chronic disease causal theories.

METHODS

Participants

Participants were recruited through a snowball process from Accra, Ghana's capital, and two rural farming towns, Kintampo and Nkoranza, located in the country's middle-belt. Data collection and analysis was part of a larger theory-driven multi-method study, reported elsewhere, that focused on people with diabetes, caregivers, lay healthy individuals and health professionals working within biomedical, ethnomedical and faith healing systems.^{5,18,19}

The theoretical framework – social representations theory – emphasises that everyday social knowledge, interaction and practices are shaped by 'competing versions of reality'.²⁰ Criteria for sampling and analysis therefore underscored diversity and complexity of everyday knowledge and experiences. Systematic attention was paid to gender, age and socio-economic differences.

Data Collection

Data was gathered using group interviews. The group interview examines the structure, process and outcomes of social communication. This provides insight into "how knowledge, and more importantly, ideas, develop and operate within a given cultural context".²¹ Six focus groups were carried out with fifty-one rural and urban individuals to gather shared knowledge of chronic diseases and to understand the processes through which knowledge developed and operated.

The focus group discussions were conducted in Bono Twi (Kintampo and Nkoranza) and English (Accra). All urban group interviews were conducted by the first

author. Three field assistants conducted rural group interviews with the first author in attendance as facilitator and note-taker. The duration of group discussions ranged from an hour to 2 hours. Permission was sought and granted to record all discussions. All participants were remunerated for participation. English interviews were transcribed verbatim. Bono Twi transcripts were translated and transcribed jointly by bilingual research assistants and the first author.

The key areas explored in the general study were:

1. Biographical and demographic data.
2. Knowledge of general health and illness categories, chronic illness and diabetes.
3. Knowledge and use of medical pluralistic medical systems.
4. Diabetes experiences: impact of diabetes on everyday experiences, social and medical relationships.
5. Illness practices: the influence of knowledge, experience, relationships and material resources on illness practice.

Analysis

All transcripts were coded using the qualitative analysis package Atlas-ti. Coding aimed to capture the range of views on three aforementioned empirical categories. Informed by social representations theory, attention was paid to consensus, conflict and absences across group and individual narratives. This systematic process facilitated the identification of converging and diverging discourses between and within groups (e.g., urban vs rural groups, young vs mature groups, male vs female group members). An intra-coder reliability test – a process that measures the consistency of a single coder coding the same material twice with a time interval – was used for the local language transcripts, given their complex multi-ethnic and language dimensions.

RESULTS

We present the results under the two empirical study areas: (I) Knowledge of prevalent chronic diseases in Ghana; (II) Chronic disease causal theories. Participants' profiles are presented in Table 1.

CHRONIC DISEASE KNOWLEDGE

Participants were asked to define 'chronic disease' and to spontaneously generate a list of common chronic conditions. Chronic disease was consensually defined as 'an incurable condition' or 'a condition that doctors and herbalists cannot cure'. Rural groups used the Twi expression of chronic disease: '*koa nkoro*', literal translation 'difficult to fight'. A clear interpretation of this local language phrase was that chronic diseases could only be managed but not cured.

Table 1 Participant Demographics [N= 51]

	Nko- ranza	Kintam- po	Accra	Total partici- pants
Age				
<20	0	0	1	1
21-40	9	7	6	22
41-60	10	9	5	24
61-80	1	0	3	4
Gender				
Female	8	7	7	22
Male	12	9	8	29
Education				
None	5	2	0	7
Primary	0	3	0	3
Secondary	14	9	5	28
Higher	1	2	10	13
Occupation				
Unemployed	0	0	0	0
Student	0	0	2	2
Farmer	5	8	0	13
Trader	4	2	0	6
Artisan	8	3	1	12
Teacher	0	0	4	4
Business (Pri- vate)	0	0	3	3
White Collar*	0	0	3	3
Retired	1	0	0	1
Other	2	3	2	7

*Accounting, Banking, Civil Service etc

Cumulatively, nineteen conditions were spontaneously listed as chronic diseases. Variations and nuances were identified (see Table 2).

Two conditions were mentioned by all groups: hypertension and diabetes

Three conditions were mentioned in both urban and rural groups, but not all groups: cancer (with emphasis on breast cancer), asthma and stroke.

Four conditions were listed only in rural groups: epilepsy, AIDS, sickle cell disease and heart disease

The remaining ten conditions appeared in single rural group discussions and often were minority views. It should be noted that this final category did contain conditions that are medically endorsed as chronic diseases (for example mental illness, arthritis and rheumatism).

Five sources of knowledge were identified. These encompassed: (1) the lay community with specific references to friends, relatives and work colleagues with chronic conditions (cancer, diabetes, hypertension, asthma, epilepsy, rheumatism); (2) public health education by healthcare providers (especially AIDS) often at durbars mediated by local chiefs in the rural towns and through medical outreach activities; (3) mass media (radio, tv; especially cancer); (4) church (with specific mention to education by doctors on epilepsy and education by people with diabetes); and (5) public transport (especially on long haul journeys).

Table 2 Frequency and spread of chronic diseases generated in group discussions

	Nkoranza* (MG)*	Nkoranza (YG)*	Kintampo* (MG)	Kintampo (YG)	Accra* (MG)	Accra (YG)
Hypertension	(+)	(+)	(+)	(+)	(+)	(+)
Diabetes	(+)	(+)	(+)	(+)	(+)	(+)
Cancer	(+)	(-)	(+)	(+)	(+)	(+)
Asthma	(-)	(-)	(+)	(+)	(-)	(+)
Stroke	(+)	(+)	(-)	(-)	(+)	(-)
Epilepsy	(+)	(+)	(+)	(+)	(-)	(-)
AIDS	(+)	(-)	(+)	(+)	(-)	(-)
Sickle cell	(+)	(-)	(+)	(+)	(-)	(-)
Heart Disease	(-)	(+)	(-)	(+)	(-)	(-)
Ten Conditions limited to single groups	Migraine Blindness Deafness Stomach ulcer	Madness Polio	Gonorrhea Epilepsy Arthritis	Leprosy	n/a	n/a

*K-Kintampo; N-Nkoranza; A-Accra; MG-Mature Group; YG-Young Group; F-Female; M-Male

CAUSES OF CHRONIC DISEASES

Chronic diseases were attributed to seven causes: poor diets, poor lifestyle practices, heredity, physical factors, the environment, spiritual factors and

psychological factors. Table 3 presents causal theories in terms of spread of views and specific conditions cited by participants.

Poor diets

There were three subthemes to the role of diet in disease. First, all participants linked chronic diseases to unhealthy eating, in particular the consumption of high sugar, high fat and starchy foods. Contemporary westernised diets, such as canned foods, butter, food

flavourings (e.g Maggie cubes) and so on were singled out for attention. “Diabetes is acquired through our eating habits. Taking in too much of sugary foods.” (K;MG)

Table 3 Causal theories of chronic illness

	Causes of chronic illness	Spread of views	Conditions
1	Poor diets (1) unhealthy foods (2) poor food storage (3) toxic staple foods	All groups	Diabetes, Cancers, Hypertension
2	Poor lifestyle practices (1) smoking (2) drinking (3) physical inactivity	All groups	Diabetes, hypertension
3	Hereditary	Some members (all groups)	Epilepsy, Sickle-cell disease, Diabetes
4	Physical (congenital)	Kintampo (YG); Accra (YG, MG)	Diabetes, sickle-cell disease
5	Environment (1) pollution (2) seasonal changes	Kintampo (MG)	Asthma, sickle-cell disease
6	Spiritual factors (1) generalized evil (2) witchcraft	All rural groups. For Urban groups, spiritual causal theories are ‘out-there’ knowledge.	Diabetes, epilepsy, HIV/AIDS
7	Psychological factors	Nkoranza (mature group)	Hypertension, heart disease

In discussing chronic disease management some participants observed that hypertension, heart disease and diabetes management required a low or no salt diet.

Danso: ...when we consider diseases that attack humans, which of them will you be forbidden to eat certain things when you take it to the hospital?

R1: For a disease like hypertension, you could be forbidden to take salt.

R2: And heart disease too

R3: And diabetes (K;YG)

Second, some rural and urban participants observed that food deterioration and contamination through poor food storage could lead to diseases like cancer. “What I know is that when canned foods are opened and we are not able to consume all, we should pour the food from the can into a bowl because when left in the can, and eaten afterwards, one could get cancer.” (K;MG)

These first two themes were linked directly to self-practice. However the third theme drew attention to practices beyond the control of lay individuals. Participants linked the rising prevalence of a variety of illnesses in Ghana to *toxic staple foods*. Farmers’ use of artificial fertilizers and pesticides, chemicals on

foods to induce faster ripening, poisons to catch wild game and freshwater fish, and poor storage of farmed produce were cited as chief contributing factors. Toxic staples were linked to illnesses generally and to cancers in particular. “when our grandparents farmed they didn’t use chemicals, fertilizers, yet their crops grew. During those times people didn’t go to hospitals as much, because of their food practices.

During those times also, diseases like AIDS weren’t prevalent. In our times diseases like AIDS have become prevalent.” (N;YG; F) “it is just like kenkey if you eat it you just develop cancer the reason behind it is with the maize when you leave it for a long time, there is this stuff that acts on it

and that is what causes cancer. But in the olden days because it was fresh straight from the farm you just eat it so there was nothing like kenkey causing cancer. But right now we intend to store it for a long time.” (A; YG).

This public consciousness about the toxicity of staple foods had changed the way some participants related to eating raw foods such as fruits and vegetables. This ironically undermined public health education on healthy eating practices.

R1: Because formerly there was nothing like spraying your tomatoes, but now we apply chemicals on the tomatoes for them to ripen at once so when you eat them you fall sick.

R2: Tomatoes these days are not even as tasty as the ones we had formerly

R3: When you go to the hospital they can tell you to eat raw tomatoes but today because of the chemicals you can't. (K; YG)

Poor lifestyle practices

References to poor lifestyle practices such as smoking and drinking were made in all groups.

“There are some chemicals in cigarettes which are not good for the body. But when one becomes addicted to it, its very difficult to stop it. Smoking, drinking and other things could destroy your health.” (N; MG)

Both urban groups and the younger rural groups attributed poor quality of health to sedentary lifestyles. Two points were made: (1) contemporary Ghanaian society was deemed less physically active compared to past generations; (2) rural communities whose daily work involved physical labour were healthier than urban communities engaged in less physical forms of work. Rural groups emphasised the negative aspect of excessive physical labour - overexertion led to stress - and endorsed rest as a proactive health practice. The older rural groups attributed heart disease to stress (see later).

Heredity

Participants observed that some chronic diseases were heritable. Conditions like epilepsy, sickle-cell disease and diabetes were linked to family histories. Some members of all groups had family members with these specific conditions. We have acquired diabetes and inherited. You might not have anyone in the family who has it and you can get it, or you get it because someone in your family has it. (A; YG; F).

Physical disruption

Two themes were discernible here. First, physical disruption was discussed in terms of congenital disorders: ie some people were born with physical disorders that were not necessarily prevalent in their families. Rural groups discussed this theme in terms of knowledge of their family histories or the family histories of people they knew. “Int: O.K. so what brings about the chronic diseases? R 1: Some people are born with it” (K; YG)

Second, physical disruption was discussed in the sense that there was something wrong with the body.

“Sometimes you might have a mild ache in your arm and you'd probably think it's just a mild bodily pain, it isn't really an illness. Sometimes this could be a stroke in the making. If you take it to the hospital they can diagnose what is actually wrong with you. Illness could bring heart disease. So even if you have a headache you have to take it to the hospital. When they diagnose you, they might even discover the onset of heart disease. So personally I feel that when you begin to feel ill, you have to take it to the hospital first.” (N; YG; F)

There was a difference between quality of knowledge of physical causes of chronic diseases between educated and uneducated subgroups (in both urban and rural settings). All groups relied on biomedical sources for information on the physical dimensions of illness, often through medical encounters and from second hand information from friends and relatives engaged in medical care. There was a consensus that biomedical practitioners were expert in diagnosing and treating chronic conditions. However educated groups demonstrated more sophisticated knowledge of chronic diseases, because they often went beyond information provided during medical encounters, drawing their knowledge from general science education and from textbooks. This did not necessarily mean that they presented accurate information on chronic diseases.

Environment: pollution and seasonal changes

In all the groups associations were made between environmental pollution – dirty surroundings, choked drains, stagnant waters, etc – and diseases such as cholera, tuberculosis and malaria. Environmental pollution was seen as both the product of unhealthy lay practices as well as dysfunctional public health institutions such as town councils. Others drew attention to seasonal changes (especially the cold rainy season) and disease. Some rural groups linked environmental pollution to asthma in their discussion of how chronic diseases could be prevented.

Others linked seasonal changes to asthma and sickle-cell disease. “I will advice such a person [with asthma] not to do hard work, to avoid dust, smoke and any smelly things as well as cold foods and drinks” (K; MG)

R: As for me I know asthma cannot be cured. There are a lot of older people who got it when they were young. When the disease strikes they take some drugs and it ceases, after about a month later, it comes back. It comes at a certain period and ceases for a while, and then comes back” (K; YG)

Spiritual disruption

Spiritual causes of chronic diseases appeared in all narratives. For some urban participants, spiritual causal theories constituted out-there theories, intrinsic to Ghanaian cultural concepts of health and illness, but not subscribed to by participants themselves.

Sometimes people think it's a spiritual illness. Because it's a curse, because of sin, they ascribe a spiritual dimension to diabetes. (A; YG; M)

For others, spiritual causal theories were viewed as both legitimate cultural as well as personally held beliefs. This second group drew on two spiritual causal theories in their discussion of chronic diseases, both of which generated some conflict between and within groups.

A generalised notion of evil: this theme was out-there and external to self and society, tied strongly to the existence and work of the devil (rural participants referred to this as 'abonsam yare': devil's, or Satan's, illness), as well as unidentifiable supernatural entities.

Spiritual disruption caused by inter-individual conflicts and punitive actions meted out through sorcery and witchcraft: Sorcery or 'bought disease' ('*Nto yare*') referred to 'contract' traditional religious ritual paid for by envious or vindictive friends, neighbours or relatives, aimed at causing misfortune or illness. *Nto yare* could occur in three ways: as a result of unprovoked envy or jealousy, as a product of past and ongoing family/social conflict, or as punitive action or retribution for moral transgression. Many rural participants placed emphasis on morality as a proactive health practice. Moral transgression was viewed as a legitimate cause of illness: "The *Bible* also says that our disobedience can bring sickness on us but if we turn away from our evil ways, we will be free from sickness". (N;MG)

Madness can be caused by spiritual means. For example say my husband died and left me possessions and the extended family wanted full ownership and I resisted, they would buy madness for me. If you go to the *mental hospitals* you see lots of widows who got mad through those means. (N; YG; F).

Sometimes these things occur through one's bad deeds. For example if you steal from someone, they can buy a disease for you. (N; YG; M)

Witches were alleged to have the power to 'infect' unsuspecting individuals with illness, misfortune or witchcraft. Witches could also cause themselves protracted and/or incurable illness. The reasons underpinning such self-directed actions were not as clear-cut as

actions directed at others. However, Margaret Field's²² ethnopsychiatric work in the Brong Ahafo Region in the 1950s which highlighted a link between self-accusations of witchcraft among elderly women and diagnosis of depression, provides important clues.

"I knew somebody who had fits (epilepsy) and went to a spiritualist. The spiritualist contacted a woman in the person's family, in the spirit. The woman confessed that the lady was very beautiful and that was why they had given her that sickness." (K; MG)

I know someone who was suffering from rheumatism and it was very serious whenever he got an attack. They sent him to many places, not knowing he was a wizard. He confessed that he had hidden scorpions in his body. Since he confessed he has never suffered from the sickness again. (N; MG; M)

Generally spiritual causal theories generated intense debate and conflict. For example, there was a consensus that ethnomedical practitioners, traditional religious healers and faith healers were spiritual experts. Some participants emphasised that chronic diseases with spiritual underpinnings could not be treated or 'cured' by biomedicine. Others referred to successful treatment of spiritually caused chronic conditions by both ethnomedicine and biomedicine.

There were deeper conflicts related to the legitimacy of spiritual expertise. The spiritual expertise of faith healers and traditional religious healers was highly contested. Traditional religious healing/healers and faith healing/healers characterised the split between delegitimized traditional religion and legitimised Christian religion respectively. To seek traditional religious treatment therefore, for the Christian majority, constituted sinful practice. Individuals were careful to distance themselves from this activity, referring predominantly to friends, relatives and acquaintances who had conducted traditional religious investigations or of circulating rumours of such practices. Faith healers on the other hand had poor knowledge of physiological underpinnings of illness, lacked pharmacological expertise, over emphasised the spiritual underpinnings of illness to too great an extent and only offered spiritual treatment.

Psychological causes

Psychological causes were discussed in terms of disrupted mental and emotional states. The role of social factors was strongly implicated. Participants noted that illnesses with psychological causes were at root framed by social and economic problems. For example, disrupted family relationships or extreme poverty led to excessive anxiety and worry, which caused illness. Hypertension and heart disease were

linked to these psychological factors. “Over thinking could cause heart diseases. (N; MG) “Hypertension is caused by over thinking, stress and fear.” (K; MG)

DISCUSSION

We will first discuss the study findings in relation to the research questions and then discuss implications for primary prevention.

Lay representations of chronic diseases

The majority of prevalent conditions in Ghana were known by rural and urban participants. The list generated tallied with prevalent conditions listed in local hospitals at the time of research. (Medical statistics were gathered from Kintampo General Hospital, St Theresa’s Hospital (Nkoranza) and Korle-Bu Teaching Hospital (Accra).) Individuals drew their knowledge from a broad range of sources: people living with chronic diseases, biomedical encounters, traditional and faith healing spheres, the mass media (radio and TV), second hand information from lay society (e.g. rumour, advice), and churches. Two legitimate sources of knowledge for most participants were people living with these conditions and biomedical professionals.

Multi-causal theories were posited for at least two conditions: diabetes and hypertension. These theories encompassed poor diet, poor lifestyles (smoking, drinking, physical inactivity), psychological stress, and heredity. These specific causal factors were aligned with expert views on risk factors for diabetes and hypertension. Other conditions such as cancers and asthma were attributed to single causes. Cancer, for instance, was linked explicitly to toxic staples and contaminated foods. Although different types of cancers exist and each type arises from complex causes, toxic foods have emerged as an important theme in expert attributions of cancer.²³ Asthma was linked to environmental pollution and to seasonal weather changes. These lay views were also aligned with expert views of asthma causation.²⁴

Physical causal theories for diabetes and hypertension, and other listed conditions were often inadequate or inaccurate. However, there was a consensus that biomedical treatment and management advice were best preferred. One rural participant offered sophisticated accounts of how to spot symptoms for hypertension and stroke. Other urban participants noted important biomedical management practices such as lowering salt intake (for hypertension) and restructuring everyday diets (for diabetes).

Spiritual causal theories of illness are an important part of Ghanaian cultural health beliefs.²⁵ Some conditions

such as epilepsy and sickle-cell disease were placed under the category of spiritual illness, deemed to require expert spiritual treatment. However spiritual causal theories evoked debate and conflict. The legitimacy of spiritual expertise of traditional religious healers and faith healers came under attack. But perhaps more crucially, there was a strong underlying narrative in all the rural group discussions that these ‘spiritual conditions’ could be managed and or ‘cured’ when diagnosed early by medical doctors.

Implications for primary prevention

Experts have identified five major risk factors, which independently or in combination cause the most common chronic diseases: obesity, high blood pressure, high cholesterol, alcohol and tobacco.²⁶ Primary prevention aims to educate and empower lay communities to adopt everyday lifestyle practices that minimise these risks.

Of these risk factors poor diet was a dominant theme in group narratives. Most participants agreed that poor diets placed them at risk of illness and specifically cancers and diabetes. There were two aspects to diet and food practices. The first aspect related to self-practices, that is what and how individuals eat in their everyday life to place them at risk of chronic diseases like hypertension, heart disease and diabetes. The second aspect related to practices by others. Here, there was a consensus that contemporary agricultural practices produced toxic foods that placed the Ghanaian public at risk of illnesses such as cancer. The crucial issue in this

latter narrative was that most individuals saw this problem as (a) lying outside their powers and (b) as a deterrent to adopting healthy eating practices such as eating fresh fruit and vegetables.

These findings provide important insights on how people think about the political economy of food production and its impact on public health. These lay concerns are aligned with the current MOH emphasis on preventative, or ‘regenerative’, health and the role of the ‘health industry’.³ But there is a need for more nuanced studies of food practices in everyday life to advance understanding of how people think about and use food for a variety of reasons, including health maintenance. Research on the relationship between salt intake and hypertension²⁷, and on body image and obesity²⁸ provide important starting points.

Narratives on smoking, alcohol use and physical inactivity were not as detailed as narratives on food and food practices. Smoking prevalence is generally low in Ghana and is only seen as a major problem in the three

Northern regions and among middle to high income men in urban areas.²⁹ Alcohol use and abuse in Ghana is more prevalent. There is a general culture of social drinking that is encouraged by a powerful alcohol industry with aggressive advertising campaigns. Some researchers attribute alcohol abuse to the psychosocial effects of poverty.³⁰ This Ghanaian work, though limited, is supported by studies in other parts of Africa.³¹ Alcohol beliefs and practices require more in-depth study.

Lay perceptions of exercise suggest that while urban communities are sedentary, exercise is subsumed in everyday rural life through farming, itinerant trading and other rural occupations that demand physical exertion. This finding is corroborated by recent studies, which suggest that traditional rural occupations and some urban class-based occupations such as street hawking may provide adequate levels of daily exercise.³² Crucially what we find in this study is a downside to rural physical activity – there may be too much of it, which may be a source of stress, as their emphasis on ‘rest’ as a proactive health practice and their attribution of hypertension and heart disease to stress suggest.

Fundamentally these lay perspectives on risk factors offer two major insights. First, there are important conceptual intersections between lay and expert knowledge. Second, because of these intersections, public health education on chronic disease prevention can be successfully anchored within existing lay representations. However the process of developing and disseminating information and of moving beyond knowledge dissemination to sustainable primary prevention interventions will be important challenges.

CONCLUSIONS

This study demonstrated that lay representations on chronic illness drew on multiple sources of knowledge that are accorded varying degrees of legitimacy. Knowledge from the biomedical sphere (particularly doctors and nurses) and personal experiences were deemed legitimate. Knowledge from ethnomedical and faith healers were ‘conditionally legitimate’: although these groups were deemed spiritual experts their practices often constituted sites of poor, incomplete or conflicting knowledge and results. These insights are strongly aligned with local research.¹³

Other knowledge sources such as churches or the mass media were not deemed legitimate or illegitimate: they appeared to be important sites of knowledge dissemination but did not elicit strong positive or negative evaluations regarding legitimacy or credibility. A clear distinction can be made between the

church as a useful space for knowledge dissemination (e.g. by publicly legitimised medical experts) and the unscrupulous faith healer as a conflicting source of knowledge. We can therefore argue that information provided by medical professionals or people living with chronic diseases at health centres, churches and through the mass media is likely to have the greatest impact on lay representations. This finding is aligned with evidence on effective chronic disease education within and outside Africa.³³

Local research suggests that chronic disease knowledge within the formal health sector is poor. Doctors and nurses have poor knowledge of diabetes,^{9,34,35} and asthma^{7,8}, dieticians have poor knowledge of diabetes⁹ and are unable to educate patients on diet management in effective practical language³⁶. If effective chronic disease education strategies are to be developed by health experts, then the first crucial step is to train health experts to provide accurate information, in practical language that lay people can understand and apply to their daily lives. Secondly, the content and delivery of educational materials must be informed by the complex ways ordinary people in rural and urban areas think about and act upon health, illness and the threat of chronic illness in their everyday lives.

It is important to note that while health knowledge and literacy are important, mere dissemination of expert health knowledge to lay communities does not result in attitudinal or behavioural change. A vast health promotion literature on smoking, condom use and HIV prevention suggests that socio-cultural, economic and political factors influence individuals' representations of and practical responses to health and illness.^{26,39} In recognition of these complex dynamics current expert recommendations for primary and secondary chronic disease prevention emphasise multi-faceted and multi-institutional models that address structural, community and individual dimensions of chronic diseases.^{26,39} Some African countries, such as Cameroon, Mauritius and South Africa have developed multifaceted and multi-institutional interventions.³³ These best practices offer important lessons for chronic disease intervention in Ghana.

Study limitations and future directions

This study had some methodological limitations. First, within the study cohort, rural-urban differences were found with respect to knowledge (or discussion emphasis) of specific chronic diseases such as heart disease, sickle cell disease, epilepsy, arthritis and mental illness. This may have been an artefact of the recruitment methodology for lay participants as focus group discussions with people with diabetes in these urban and urban contexts yielded comparable

representations of chronic disease knowledge.^{5,19} Future research will need to expand lay participant recruitment to maximise meaning saturation across rural-urban research groups.

Secondly, these findings may not be generalizable to other regional and ethnic contexts. The focus of the research was on a limited number of individuals (N=51) in southern Ghana and, for the rural areas, largely on Akan Christian communities. Knowledge and experiences might be different in Northern Ghana, for example, which has different ethnic and chronic disease risk profiles and is predominantly Muslim. However, the theory-driven, multi-site, multi-experiential qualitative approach adopted has uncovered clear patterns of chronic disease knowledge across key demographic arenas such as geographical location, socio-economic status, educational status and age. Within the context of best practices in other African countries, these research insights can instruct the development of context specific primary prevention interventions in rural and urban Ghana.

REFERENCES

1. Amoah, A.G.B. Sociodemographic variations in obesity among Ghanaian adults. *Public Health Nutrition*, 2003, 6(8): 751-775.
2. Agyei-Mensah, S. and de-Graft Aikins, A. Epidemiological transition and the double burden of disease in Accra. *Journal of Urban Health*, 2010, 87 (5): 879-897.
3. Ghana Health Service (GHS). Five Year Strategic Framework for Service Delivery, 2008. Accra: Ghana Health Service.
4. GHS. The Ghana Health Sector. 2005 programme of work. 2005. Accra: Ghana Health Service.
5. de-Graft Aikins, A. Healer-shopping in Africa: new evidence from a rural-urban qualitative study of Ghanaian diabetes experiences. *BMJ*, 2005, 331, 737.
6. Amoah, A.G.B, Owusu, S.K., Acheampong, J.W., Agyenim-Boateng K., et al . A national diabetes care and education programme: the Ghana model. *Diabetes Research and Clinical Practice*, 2000, 49(2-3):149-57.
7. Forson, A. Epidemiology and Prevention of Chronic Obstructive Pulmonary Disease. Paper presented at the 1st Annual Workshop, UK-Africa Academic Partnership on Chronic Disease in Africa, Noguchi Memorial Institute for Medical Research. (11th April 2007)
8. Hesse, I.F. Knowledge of asthma and its management in newly qualified doctors in Accra, Ghana. *Respiratory Medicine*, 1995, 89(1):35-9.
9. Monitoring and Evaluation Team. Formative and Baseline Research on Diabetes Mellitus in Ghana. Ghana Diabetes Care and Disease Management Project. 1998, Report submitted to Eli Lilly & Co.
10. Addo J, Smeeth L, Leon DA. Prevalence, detection, management, and control of hypertension in Ghanaian civil servants. *Ethn Dis*. 2008;18:505-511.
11. Bosu, W.K. Ghana's National NCD Programme: history, prospects and challenges. Paper presented at the 1st Annual Workshop, UK-Africa Academic Partnership on Chronic Disease in Africa, Noguchi Memorial Institute for Medical Research. (12th April 2007)
12. Ofei F, Forson A, and Appia-Kusi J. A preliminary study of self-care behaviour among Ghanaians with diabetes mellitus. *GMJ*, 2002, 36(ii):54-59
13. Clegg-Lamprey JNA, Hodasi WM: A study of breast cancer in Korle Bu Teaching Hospital: Assessing the impact of health education. *Ghana Medical Journal* 2007, 41(2):72-77.
14. Ministry of Health (MOH) (Ghana). The health of the nation. Analysis of Health sector programme of work: 1997-2001. 2001, Accra: MOH.
15. Unwin, N., Setel, P., Rashid, S., Mugusi, F., Mbanya, J., Kitange, H., Hayes, L., Edwards, R., Aspray, T. and Alberti, K.G.M.M. Noncommunicable diseases in sub-Saharan Africa: where do they feature in the health research agenda? *Bulletin of the World Health Organisation*, 2001, 79(10), 947-953.
16. Sanders, D. M., Todd, C., & Chopra, M. Confronting Africa's health crises: More of the same will not be enough. *BMJ*, 2005, 331, 755-758.
17. WHO. *Working together for health: World health report*. 2006, Geneva: WHO.
18. de-Graft Aikins, A. Exploring biomedical and ethnomedical representations of diabetes in Ghana and the scope for cross-professional collaboration: a social psychological approach to health policy. *Social Science Information*, 2002, 41(4), 603-630.
19. de-Graft Aikins, A. Reframing applied disease stigma research: a multilevel analysis of diabetes stigma in Ghana. *Journal of Community and Applied Social Psychology*, 2006, 16(6), 426-441.
20. Moscovici, S and Duveen, G. Social representations: Explorations in Social Psychology. 2000, New York: New York University Press.
21. Kitzinger, J. Qualitative Research: Introducing focus groups. *BMJ*, 2005, 311:299-302. (p.310)
22. Field, M.J. Search for Security. An ethnopsychiatric study of rural Ghana. 1960, New York: W.W. Norton & Company.

23. WHO/FAO. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert Consultation. 2003. Geneva: WHO.
24. Wjst M, Boakye D. Asthma in Africa. *PLoS Medicine* 2007; 4(2):e72.
25. Twumasi, P.A. Medical Systems in Ghana. 1975/2005 (2nd Ed) Accra: Ghana Publishing Corporation.
26. WHO. *Preventing chronic disease: A vital investment*. 2005, Geneva: WHO.
27. Cappuccio FP, Micah FB, Emmett L, Kerry SM, Antwi S, Martin-Peprah R, Phillips RO, Plange-Rhule J, and Eastwood JB. Prevalence, detection, management, and control of hypertension in Ashanti, West Africa. *Hypertension*, 2004, 43(5):1017-22.
28. Duda, R.B; N.A. Juma; A.G.Hill; J. Seffah; R. Biritwum. Interest in healthy living outweighs presumed cultural norms for obesity for Ghanaian women. *Health and Quality of Life Outcomes*, 2006, 4: 44.
29. Ghana Statistical Service (GSS), Noguchi Memorial Institute for Medical Research (NMIMR), and ORC Macro. *Ghana Demographic and Health Survey 2003*. 2004, Calverton, Maryland: GSS, NMIMR, and ORC Macro.
30. Ofori-Atta, A., de-Graft Aikins, A., Sefah-Dedeh, A., Ohene, S., and Anum, A. A survey and observational study of alcohol drinking patterns and their impact on family, economic and community life in the Upper West Region of Ghana. 1998, Research Report submitted to DANIDA.
31. McCurdy, S. '[Tackling drugs to reduce poverty](#)', id21 insights health 10, February 2007
32. Amoah, A.G.B. Obesity in adult residents of Accra, Ghana. *Ethn Dis*, 2003, 13(2 Suppl 2): S29-101.
33. de-Graft Aikins, A, Boynton, P. Atanga, L.L. Developing Effective Chronic Disease Prevention in Africa: insights from Ghana and Cameroon. *Globalization and Health*, 2010, 6:6.
34. Monitoring and Evaluation Team. Evaluation of a 3-Year Training Programme in Diabetes Mellitus for Health Care Professionals. Ghana Diabetes Care and Disease Management Project. 2001, Report submitted to Eli Lilly & Co.
35. Noordermeer, C. Diabetes care in Ghana: an exploratory study in Greater Accra Region. 2007, Unpublished MSc Thesis, 2007, Vrije Universiteit Amsterdam.
36. Gatiba, M., Owusu, W.B. and Amoah. The nutritional knowledge of diabetic patients in Accra. Paper presented at the Africa Nutrition Epidemiology Conference, 15th -18th August, 2006, Accra, Ghana.
37. Suhrcke M, Nugent RA, Stuckler D and Rocco L. *Chronic Disease: An Economic Perspective* London: Oxford Health Alliance; 2006.