Why culture matters in reducing the burden of NCDs and CDs in Africa

Collins Airhihenbuwa and Juliet Iwelunmor

Introduction

In 2011, non-communicable diseases (NCDs) such as diabetes and hypertension were recognised at a UN high-level meeting 'as a threat to the achievement of internationally agreed upon goals' (United Nations, 2011). The statistics are startling. For example, as of 2011, there were 366 million people living with diabetes and this is expected to rise to 522 million by 2030 (Whiting et al., 2011). Currently, over 600 million people are hypertensive (Sacco et al., 2011) and this is predicted to increase to a total of 1.56 billion people by 2025 (Lago et al., 2007). In 2008 alone, NCDs and their risk factors were responsible for 36 million deaths, with nearly 80 per cent of these deaths occurring in low- and middle-income countries (WHO, 2011). Also, nowhere is death and disability due to NCDs rising more rapidly than in sub-Saharan Africa, where it is projected that these diseases will outpace reductions in infectious diseases, contributing to a rising 'double-burden' of disease (Alwan et al., 2011).

The underlying causes of NCDs are preventable risk factors such as tobacco use, unhealthy diets and physical inactivity, mediated by societal and environmental factors coupled with globalisation and rapid urbanisation. Research indicates that consumption of foods high in saturated and industrially produced trans fats, salt and sugar are responsible for 14 million deaths or 40 per cent of all deaths every year from NCDs, while 3.2 million deaths are attributable to insufficient physical activity (Beaghole et al., 2011; Sacco et al, 2011).

To alter the course of the epidemic, as called for at the UN high-level meeting, there needs to be a major paradigm shift in current intervention strategies. It is time to move beyond individual-level lifestyle-focused polices and interventions to address the collective contexts (i.e., culture) that influence individual behaviours. Given the available evidence about the influence of culture on health and health behaviours, in this paper we highlight the role culture can play in the design of interventions aimed at reducing the global burden of NCDs such as diabetes and hypertension. The objectives of the paper are: (1) to discuss why culture matters for priority actions to tackle the NCDs crisis; and (2) to propose a cultural model to support the management and control of NCDs such as hypertension and diabetes, drawing from lessons learned with applying the model in HIV/AIDS research.

Cultural determinants of management and control of NCDs

Whether it is hypertension or diabetes, available evidence demonstrates that culture plays a vital role in determining how these diseases are interpreted or managed by individuals. Culture is essentially a building block for constructing personal understandings of health and illness whether in relation to perceptions people may have about their health or in describing their health-seeking practices. Indeed, at the centre of the priority actions aimed at substantially reducing the burden of NCDs in Africa, considerations of culture are as important as the comprehensive package of primary prevention, sound leadership, health-care interventions and improved surveillance (BeLue et al., 2009).

For example, to reduce the burden of hypertension, primary prevention through a reduction in population-wide salt consumption is viewed as a top priority action (Beaghole et al., 2011). However, reducing salt intake cannot be separated from cultural factors influencing nutrition-related beliefs and attitudes towards the use of salt in food preparation. In many parts of West Africa, for example, bouillon cubes such as Maggi or Knorr are used in almost every household to enhance or intensify the taste of food (Akpanyung, 2005; Nnorom et al., 2007). According to Elemo and Makinde (1984), the major active ingredients in bouillon cubes are salt and monosodium glutamate. Yet, while concerns have been raised about their salt content (ibid.; Nnorom et al., 2007), they continue to be used extensively.

For example, a survey by Kerry et al. (2005) found that almost all the participants (98 per cent) in Ashanti, West Africa, reported using salt during cooking with 52 per cent in the rural villages and 56 per cent in the semi-urban villages adding bouillon cubes. Similarly, in the rural and urban areas of Enugu, Nigeria, Henry-Unaeze (2010) observed that 95.8 per cent of households used bouillon cubes. Although about 71 per cent of the participants were aware of the health problems associated with these cubes, the acquired taste now associated with them seemed a more important factor (ibid.). As a result, while mass media campaigns help to create awareness about the health problems of salt consumption (Beaghole et al., 2011), these efforts may be futile if the same vigour is not applied to addressing the cultural factors driving patterns and sources of salt intake.

In the context of diabetes management and control, as with hypertension, numerous policies and prevention campaigns are underway to promote the consumption of food low in sugar. While these actions may signal optimism for the management and control of diabetes, their success will also rely on addressing the cultural dynamics that frame everyday management and self-care practices (De-Graft, 2004). Indeed, available evidence indicates that cultural influences play a critical role in shaping how individuals and families perceive, diagnose and manage the disease.

For example, in Bafut, Cameroon, Awah et al. (2009) observed that there were multiple indigenous labels for diabetes, which was referred to as 'fumbgwuang' or 'shugar' with the prefix 'nighoni' (sickness or disease). 'Nighoni-shugar' thus denotes 'sugar disease'

and 'nighoni-fumbgwuang' means 'disease that is sweet'. They noted that these indigenous labels for diabetes subsequently influenced self-diagnosis and management in both traditional and modern biomedical settings. Indigenous diagnostic tools such as divination were also found to be important in guiding the naming, diagnosis and management of diabetes (ibid.). The findings of this study underscore how diabetes straddles modern lifestyles and traditional beliefs and how socio-cultural knowledge may influence treatment-seeking choices and practices.

Similarly, in Ghana, De-Graft (2003; 2004) observed that the Twi term 'esikyere yare', which literally means 'sugar disease', was used to describe diabetes with the notion of 'esikafoo yare' (disease of the wealthy). According to De-Graft (2003), rural and low-income urban respondents argued that 'since sugary and fatty foods were common among the rich, in terms of access and acquired taste, diabetes was likely to be more prevalent within this social group.' These eclectic sources of knowledge informed multiple illness action for diabetes whether in relation to drug treatment, dietary management or spirituality.

Like diagnosis, culture also influences caring behaviours. In Dar-es-Salaam, Tanzania, Kolling and colleagues (2010) observed that living with diabetes or caring for someone with diabetes was very much a family matter whether in terms of acquiring medicine, accompanying a family member to a health clinic or in the provision of a healthy diet.

Together, these studies illustrate that culture is central to reducing the burden of NCDs such as hypertension and diabetes. While researchers in and outside of Africa may debate when and where culture should matter, what is no longer in question is the role of culture in decisions about health and well-being. Indeed, public health and development interventions for hypertension and diabetes in Africa will continue to be inadequate and unsustainable until we are resolute about ensuring that these interventions are anchored in culture. One starting point is the use of the PEN-3 cultural model in the development, implementation and evaluation of health interventions for NCDs.

Cultural response to diseases: lessons from the application of the PEN-3 cultural model

Culture is a collective sense of consciousness with both quantifiable and unquantifiable components. The PEN-3 model (see figure 1) was developed in 1989 (Airhihenbuwa, 1989) to centralise culture in public health and health education programmes in Africa. It consists of three primary domains: relationships and expectations, cultural empowerment and cultural identity. Each domain includes three factors that form the acronym PEN: person, extended family, neighbourhood (cultural identity domain); positive, existential, negative (cultural empowerment domain); and perceptions, enablers, nurturers (relationships and expectations domain). The PEN-3 emphasises behaviour within the broader context of culture to discern the roles, values and norms that are supportive or not supportive of different types of activities aimed at promoting health. PEN-3 offers a cultural lens for addressing health issues and problems by first identifying the positive aspects of a culture.

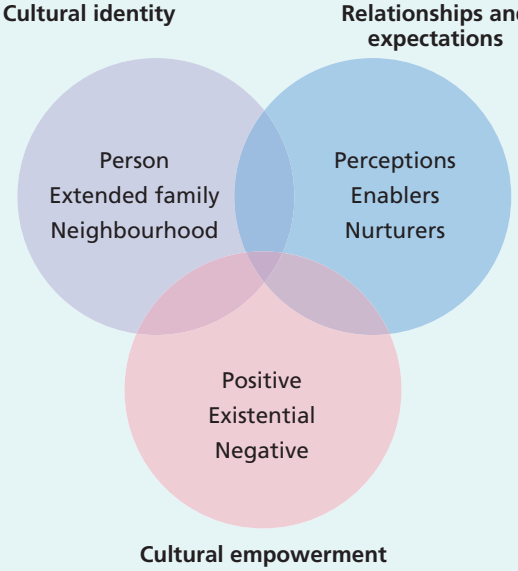
In the 23 years of its application in over 100 studies globally, the most important feature of the model has been the recognition that all cultures have positive aspects to them, particularly in the case of health problems that concern relationships with others and/or the influence of family and community contexts in nurturing the health behaviour of interest. While conventional models of health behaviour change may focus primarily on ways to change negative health behaviours and practices, the PEN-3 model provides the opportunity to examine the values and beliefs that promote the health behaviour of interest or pose no threat to health so that negative values or beliefs are located within the broader context of culture. It shifts away from the exclusive focus on individuals to a much broader emphasis on the relationships and expectations within given contexts and insists that every context includes something positive, something unique and something negative.

Although this paper focuses on the cultural contexts of managing hypertension and diabetes, we can learn important lessons from studies applying the PEN-3 model to HIV/AIDS as they underscore the importance of incorporating culturally relevant factors in the development of effective health interventions. For example, when the PEN-3 cultural model was used to explore factors that influence HIV disclosure among women in South Africa, Iwelunmor et al. (2010) revealed that there could be both positive (e.g., acceptance and support) and negative (e.g., disruptions in mother-daughter relationships) consequences associated with disclosure, while the existential role of motherhood (i.e., breastfeeding) could influence a participant's decision to disclose. This cultural analysis revealed the importance of viewing mothers from a positive and empowering lens while recognising the unique location of their multiple agencies in the family and community (ibid.).

In using the PEN-3 cultural model to explore the meaning of HIV/AIDS stigma in South Africa, families and health care centres were found to have both 'positive non-stigmatising values' enabled through supportive roles, 'existential values unique to contexts' such as the importance of food in contextualising relationships, and 'negative stigmatising characteristics' such as the blaming of HIV/AIDS on women (Airhihenbuwa et al., 2009). When stigma is

Figure 1

The PEN-3 model



framed within a cultural lens, the priorities for change originate from within the culturally defined group. They are driven by collective understandings of what the major problems are, followed by steps on ways these problems ought to be resolved. The contexts of stigma are then transformed through collective discussions that highlight ways to reduce stigma by promoting positive behaviours and changing negative ones (Airhihenbuwa et al., 2009; Smith and Mbakwem, 2010).

For diabetes, PEN-3 is considered to be an effective strategy to address the cultural bases of diabetes prevention among African Americans in the United States (Cowdery, Parker, and Thompson, 2010), among Mexican Americans (Melancon et al, 2009) and among British Bangladeshis (Grace et al., 2008). As illustrated in these studies, at the core of the PEN-3 cultural model is an evaluation of the ways in which culture influences, nurtures or constrains health behaviour change. A key point here is that such evaluations are necessary to understand the ways in which health behaviours are constructed and to develop solutions from within a given culture. Moreover, to overlook the apparent role of culture is to risk ignoring positive actions already engaged by people or actions that pose no threat to health.

PEN-3 cultural model applied to HIV/AIDS, diabetes and hypertension.

To fully underscore the key tenets of culture as applied to health outcomes, we present a table that shows briefly the cultural importance of behaviour, drawing on lessons learned in HIV/AIDS to illustrate implications for prevention and management of hypertension and diabetes in Africa. In Table 1, we crossed one

Table 1

PEN-3 and HIV/AIDS, hypertension and diabetes in cultural contexts

PEN-3/ Three health outcomes	HIV/AIDS	Hypertension	Diabetes
PERCEPTIONS	++We should not stigmatise but be supportive of persons living with HIV/AIDS.	++Hypertension can be developed at any age by anyone regardless of your education level.	++Diabetes can be prevented and those who have it can manage it with the support of family and friends.
	==There are language codes used in different cultures to describe HIV.	==There are language codes used to hide hypertension.	==There are language codes used to lament having diabetes.
	—Knowing about how HIV is contracted has not resulted in changes in risk behaviour such as unprotected sex.	—Knowing about HBP has not changed the behaviour of those who have it or those who do not like dietary change.	—Knowing about diabetes has not changed the behaviour of those who have it or those who do not like dietary change.
ENABLERS	++Health-care workers are supportive of persons with HIV/AIDS.	++Health and nutrition counselling by health-care workers.	++Health and nutrition counselling by health-care workers.
	==African cultures are rich with nutritious food including fruits and vegetables that have proven effective in promoting health.	==Use of traditional herbs and roots for healing and the role of spirituality in healing.	==Use of traditional herbs and roots for healing and the role of spirituality in healing.
	—Health-care providers and government policies that discriminate against persons living with HIV/AIDS.	—Lack of screening and treatment for HBP. Lack of the skills and resources for effective stress management and BP monitoring.	—Lack of screening and treatment for diabetes. Lack of the skills and resources for effective diabetes management and monitoring.
NURTURERS	++Family members caring for loved ones.	++Available and affordable nutritious foods rich in vitamins.	++Available and affordable nutritious foods rich in vitamins
	==Home-based care provided by people in the community.	==Value placed on sharing meals together as a family.	== 'esikyere yare' (Ghana); fumbgwuang or shugar (Cameroon).
	—Family rejecting a member of their family at a time they need support because they live with HIV/AIDS.	—Cooking with Maggi cubes and bouillon known for excess salt. Local drinks with too much sugar.	—Cooking with Maggi cubes and bouillon known for excess salt. Local drinks with too much sugar.

Key: ++ positive to be promoted; == existential to be recognised; — negative to be changed

domain of PEN-3 with the three health outcomes of HIV/AIDS, hypertension and diabetes. Under each of the health outcomes, we used signs for positive, existential and negative.[1] Our intent is to highlight key cultural values and practices that should be promoted, acknowledged and/or discouraged. The table also demonstrates how culture can contribute to the overall success of priority actions against diabetes and hypertension.

What we want to demonstrate is that every context has something good, something unique and something bad. We should always begin with the positive to affirm and applaud positive actions that exist in the community. We should not blame unique qualities, often represented as culture, for the failure to develop an effective and sustainable intervention. While we focus on the negative to be changed, we should not focus only on the negative without promoting the positive and recognising the unique/ existential cultural qualities.

> “… every [cultural] context has something good, something unique and something bad. We should always begin with the positive to affirm and applaud positive actions that exist in the community. We should not blame unique qualities, often represented as culture, for the failure to develop an effective and sustainable intervention.

Conclusions

Culture is central to reducing the burden of NCDs in Africa. We have presented a brief description of a cultural model that has been used to address health problems on the continent by drawing on lessons learned in HIV/AIDS to inform strategies to reduce the burden of hypertension and diabetes. Since these diseases are intricately linked to behaviours we must engage in to survive and thrive – eating and drinking – the role of culture is even more critical than in behaviours that have no value for life, such as smoking.

A critical part of policy and programmatic decisions needed to address these health outcomes requires an excavating of cultural food ways that were discarded and finding more affirmation in the literature for their health benefits. For example, the nutritional value of coconut as an oil and skin product has never been more lauded as in current times. One only has to recall mothers and grandmothers who made family skin lotions from coconut extracts to acknowledge this cultural production in African countries. Culturally produced foods ranging from cassava and its leaves to yam and palm oil are experiencing a resurgence in their value for health. Food preparation patterns of steaming and boiling (never frying) were the norm in many African cultures only to experience a decline in the era of modernity. These practices should be re-examined as cultural practices that are proven to be most sustainable in health promotion and disease prevention. If we are to bring the NCD burden in Africa under control, we must look to African cultures for the way forward.

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Endnote

[1] The table as originally designed also uses colours, in addition to the signs, consistent with universal traffic signals to indicate positive behaviour and contexts: 'green' for behaviour that we should continue; 'yellow' for existential behaviour to be recognised and acknowledged; and 'red' for behaviour to stop until it changes to positive.

Collins Airhihenbuwa and **Juliet Iwelunmor** are with the Department of Biobehavioral Health, Penn State University, 315 Health and Human Development East, University Park, PA 16802. Professor Airhihenbuwa is the Head of Department and is the author of the PEN-3 model for health behaviour with a focus on people of African descent.