A stated preference discrete choice health literacy intervention framework for the control of non-communicable diseases (NCDs) in Africa

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Introduction

In Africa, vis-à-vis the fact that Africans are generally and comparatively not health-literate, this chapter includes (but is not limited to) a key conceptual definition of health literacy and its contextualisation. In doing so, this chapter also discusses the pitfalls of the current health structure in Africa, looking at the underlying reasons exacerbating the increase in non-communicable diseases (NCDs) on the continent and introduces a stated preference discrete choice health literacy intervention framework for the control of NCDs. It also provides age-sex disease prevalence in Cameroon and general aspects of health promotion and disease prevention strategies with respect to NCDs.

Health literacy is an indispensable key component of ensuring a healthy condition in individuals that transcends into the entire community (Adams et al, 2009; Dodson et al, 2015), if individuals are knowledgeable in health information, and are able to synthesise it, use it through their individual convictions for decision-making and consequently, improve their health, then the entire community is bound to be healthy (Remais et al, 2012; Dodson et al, 2015; WHO, 2016). However, such access to health information remains under-utilised thus far (O’Sullivan et al, 2003; Baye and Fambon, 2010).

The function of health literacy in ensuring a healthy condition in individuals and communities is especially relevant in Africa, which is plagued with high endemic diseases, and in settings in which healthcare resources and infrastructure are, for the most part, limited (O’Sullivan et al, 2003; Remais et al, 2012). There is therefore a need to evolve an appropriate health literacy intervention for individuals in Africa (Remais et al, 2012; Wiesner and Pfeifer, 2013). Because there are so many social, financial, cultural, gender, educational and cognitive barriers in Africa (Lopez et al, 2006; Remais et al, 2012; Wiesner and Pfeifer, 2013), a health literacy contextual framework would have to capitalise on the sociocultural peculiarities of an African individual: like the ‘Ubuntu’ philosophy,
‘I am because you are’ and hence like Descartes, ‘I think, therefore I am’. This implies that, if one individual becomes health literate in a community, it is likely that the knowledge would cascade to other community members, thus rendering the entire community health literate. Africans believe and live in solidarity with supportive mutual tendencies to one another, which ties to the “Ubuntu” concept. These social, cultural and cognitive barriers are determinants that characterise an African individual and would form the basis of a sustainable health literacy intervention at the individual level to mitigate the rising risk of NCDs. Better health-literate people have an impact on the wider community in which they live (Bandura, 2004; Nutbeam, 2000, 2008; Oguoma et al, 2014). Community starts from individuals first, with each individual likely to influence others to lead to a healthy community.

Generally, in most African communities, an individual who is suffering from cancer or any other chronic disease easily draws attention from the entire community (Uchenna et al, 2012; Udenze et al, 2013). It soon attracts neighbours, extended family members, social group members and religious group members (Harris et al, 2011), and most likely affects the entire community psychologically (a psychopathic effect) (Harris et al, 2011; Stellefson et al, 2013; Udenze et al, 2013). These effects and experiences are to be exploited in building health literacy intervention and promotion to prevent NCDs. Global figures of NCDs in Africa clearly suggest that they are on the rise (WHO, 1998; Kiawi et al, 2006; Nwose et al, 2013). A case study showing the incidence of NCDs in Cameroon is now shown, highlighting the gravity of the problem (O’Sullivan et al, 2003).

Age-sex disease prevalence in Africa, with a focus on Cameroon (2011-16)

In this section a brief overview of the rising trend of NCDs such as diabetes, hypertension and cancers in Africa is described, with Cameroon chosen as a case in point. Cameroon is presently experiencing the double burden of infectious and chronic NCDs (Echouffo-Tcheugui and Kengne, 2011). It is undergoing social and economic changes, which are resulting in increased urbanisation with a potentially negative impact on health-related behaviours. Experience and empirical evidence has revealed that certain NCDs have predominated in Cameroon within the last 10 years. Notably for men, the following rates can be reported: diabetes (5.3%), hypertension (26.4%), stroke (15%), rheumatism (4.8%), prostate cancer (19.2/10,000) and asthma (1.5%); and for women: diabetes (5.3%), hypertension (29.6%), rheumatism (4.8%), asthma (1.5%), breast cancer (27.9/10,000), and cervical cancer (24.0/10,000) (Echouffo-Tcheugui and Kengne, 2011).

Apart from the known risk factors for NCDs that cut across all continents, in Cameroon in particular, local diets and certain traditional meals are high risk factors. In Kom village in the Boyo county in the North West region of Cameroon, the traditional meals that are eaten daily, seven days a week, and
in great quantity, are largely corn starch and unbleached palm oil-based mixed with salt and little vegetables. These meals are eaten in all traditional celebrations (personal communication with chiefs, 2017). This is along with heavy alcohol intake of both beer and local liquors that are largely starch-based. Several such traditional meals in the country are risk factors for hypertension and diabetes. Many people are unaware of their health status and consume large amounts of these foods and drinks.

Most Cameroonian people (as with most Africans) are not vegetarians, and generally eat fewer vegetables compared to other continents (Udenze et al, 2013). The nutritional value of vegetables is well known, but there is a cultural perception that eating vegetables in some tribes in Africa is a real stigma (personal communication with local people, 2017). For instance, the nomadic Fulani pastoralist tribe in Cameroon considers eating vegetables or salads as herbivorous or synonymous with cattle. Furthermore, lifestyle changes in diets have been seen in most villages in the last 30 years (WHO, 1998; Kiawi et al, 2006), with some traditionally healthy foods abandoned in lieu of more exotic foods (Udenze et al, 2013). For example, millet, sorghum and red maize are healthy grains that were previously well consumed, but nowadays they are consumed less and are less cultivated by local people in Cameroon and Nigeria (personal communication, 2016).

Another risk factor for chronic obstructive pulmonary disorders (COPDs) is poor indoor air quality. This is due to increased fuel wood consumption as well as tobacco consumptions, which presents a double risk factor for COPD. Most traditional meals in Cameroon are prepared by women in poorly ventilated, smokey kitchens. They do this almost daily – we can only imagine the amount of toxic gases and phenols they may have inhaled.

**Pitfalls in the current health promotion and disease prevention approaches**

In this section the shortcomings of the present health picture and infrastructure in Africa are presented. These shortfalls are described in relation to why NCDs are on the rise despite other therapeutic and palliative management systems being in place. The necessity of an appropriate health literacy intervention approach as a way of addressing these pitfalls is highlighted.

It is important to build health literacy in African communities via a Behaviour Change Communication (BCC) in order to convey messages geared towards awareness and permanent adoption of good practices in such a way that people are able to abandon their old, unhealthy habits and embrace and use new knowledge (Baye and Fambon, 2010; Stellefson et al, 2013). The use of audiovisual gadgets, health talks/video projections, role-plays in health facilities, schools and social groups alone doesn’t seem to have had a profound impact (Harris et al, 2011). Using the BCC programme cycle, beginning with primary data collection followed by formative research, monitoring of programme activities, outcome
and impact evaluations, may have a positive health outcome. A stated preference discrete choice intervention is needed and requires these attributes:

- a situational analysis or reality check that identifies individual health literacy skills and assets for communities across Africa;
- village assets, beliefs, customs and convictions held by the individual with the leaders and individuals supported to be co-involved in the concept mapping, assets measurement, evolving the interventions together.

The stated preference here is to delve into specific customs and rituals that promote risk factors for acquiring NCDs to check adherence to these belief systems and reasons for these adherences, and whether or not any perceived punishment enshrined in the customs is applicable if there is a navigational change in lifestyle. Health literacy could be a tool in the context of health promotion or disease prevention in Africa with respect to the control and prevention of diabetes, hypertension, cancers and mental health disorders.

**Reflections on the stated preference discrete choice health literacy intervention framework**

In this section we explore what a stated preference health literacy intervention is, and why it is a critical tool to use in controlling NCDs across Africa. Appropriate health literacy interventions are those that are fit for purpose and contextualised to solve the specific health needs of individuals and communities at large, recognising the social, gender, cultural and educational characteristics of that individual or community (Nutbeam, 2000, 2008; Kiawi et al, 2006; Uchenna et al, 2012; Udenze et al, 2013). Individual and community health needs differ, from village to village and from continent to continent. For health literacy to be effective and sustainable, it should be administered as ‘health literacy packages’ that are customised for the respective cultural, gender and educational competencies of a particular community. This is what we mean by ‘stated preference discrete choice health literacy intervention. Health literacy at the individual level needs to be intensified across Africa, considering the rising incidence of NCDs (Kiawi et al, 2006; Harris et al, 2011; WHO, 2016) – it is easier for a community to be healthy if individuals are healthy, which then cascades down into the entire community.

Current health promotion interventions in current use in Cameroon and Africa at large are inadequate as they are too exo-centric in style, language and construction – a health literacy intervention culled from a very exo-centric set-up and tailored for the European context, for instance, may not be transferable to Africa. In this case, a stated preference choice health literacy package is advocated. The most important barriers in this context are differences in educational, occupational and population literacy, such as a strong sense of person-to-person interaction and community and social relatedness in African cities and villages that are different from Eurocentric and American–Australian contexts.
Health literacy interventions in Africa still need to be thorough and well targeted, but typically an epistemic understanding of the individual and their related health needs would signal the type of intervention to apply and anticipated outcome. Health promotion exercises in Africa are currently too linear in application. Linearity here means providing a solution to a certain problem without taking into account the contextual barriers of its wider implementation, which may be entirely different from what the researcher or facilitator wants to provide, as well as its perceived urgency and necessity. This probably explains the persistent endemicity of certain diseases on the continent despite concerted efforts in treatment applications and the failure of several development-based interventions provided, both in the past and present. For instance, in Africa, health literacy and health promotion for people with diabetes is widespread, but focuses mostly on how the patient needs to take their pills, regular exercise, diet and, of course, sugar level monitoring, but very little and no such organised efforts target individuals who are non-diabetic in the community for preventive measures.

This health literacy approach remains inadequate so long as the specific health literacy needs of the individual and the targeted communities are not adequately measured (Kiawi et al, 2006; Harris et al, 2011; Uchenna et al, 2012; WHO, 2016). Additionally, the theoretical tenets of health literacy are not well understood in Africa; the element of understanding health knowledge and applying it for informed decision-making for better health outcomes and equity is grossly lacking, both for the individual and health professionals. An entire overhauling of the health literacy and promotion strategies are required if the Sustainable Development Goals are to be realised.

An holistic integrative health literacy approach is critical to curb the rising incidence of NCDs in Africa. An holistic, integrative health literacy approach can contribute to people’s education, knowledge and belief systems, leading to long-term sustainable change. Individual health literacy on NCDs and its processes connected to its development are also closely linked to an individual’s emotional factors such as trust and sense of belonging. For this purpose, trust and confidence toward the provider of health-related information and the provider’s track record in his or her respective community in which the person hails can positively or negatively affect uptake of an intervention. To this effect, this can be effectively realised via a health literacy laboratory.

There are already effective measurements of health literacy in Western societies (Bandura, 2004; Dodson et al, 2015), but a thorough measurement of health literacy in NCDs across Africa must be done. Although health literacy appears well known in Western communities, its conceptual tenets and practice are not well enshrined in the various African cultures and ways of life. Since it is therefore not well measured, the outcomes of any haphazard interventions so far reported are pretty much assumed and presumptive. The underlying explanation for the fast epidemiological transition of NCDs in Africa still needs to be studied. It cannot simply be explained with the known reported risk factors for NCDs; there are other cultural specific factors yet to be espoused. As no one cause can explain this,
the force of the argument here is that it is far from being just lifestyle changes, an exotic food diet, alcoholism and cigarettes, but local culture and customs are also likely cause factors. This is because there are increasing numbers of people living in village settings across Africa who are not attuned to exotic lifestyles and certain foods except for local foods and customs, who are increasingly diabetic, hypertensive and with cancers or at high risk of developing cancers or COPDs.

A bottom-up approach in quantitatively analysing these latent root causes as well as appropriate intervention strategies is part of the discrete choice preference in this scenario. Individuals in Africa for the most part grow up either with no health knowledge, little health notion or wrong health information that has been passed on from their parents. Some health information is misconstrued and parcelled into local belief systems and superstitions, thus making it difficult to dispel over time and space. Health literacy interventions in this case would start with appropriate measurements of how the individual or community is so attuned to the belief systems, then any intervention can only be built by carefully talking them out of these cultural perceptions, thus facilitating people to be self-convincing. This can then enable them to access, process and apply health-related information themselves, allowing for sustainable change.

Therefore, the provision of knowledge (that is, health information) ought to be connected with education about options of how to apply that knowledge autonomously. For example, in a community whose priority is potable water, a health literacy intervention on curbing diabetes and cancer may not be quickly be accepted and sustain. This urgent need may mask the need for a literacy programme that addresses hypertension or cancer. To this effect, a joint intervention approach of providing potable water and then educating people on hypertension and cancer is the way to go. In a case scenario with the people of Balikumato village in Boyo County, a village in the North West Cameroon, we undertook a health literacy and promotion package in 2013 where it was noticed that the people (a population of 350) had as a priority potable drinking water.

To effectively gain entry and get their individual attention, a health literacy package built on cancer, hypertension, diabetes prevention and empowerment, with skills on household water purification carefully packaged. This integrated, cloned health literacy package gave the opportunity for the community to group themselves and begin training other members on the skills acquired. The community became highly mobilised so that two years afterwards, a revisit to the community indicated the level of awareness as not only high, but having cascaded down to others.

At this point it must be emphasised that this community was mostly illiterate and uneducated. The same approach was applied with the Sayawa community living in Gwallameji, in Bauchi State Nigeria, and the same proactive response was registered a year afterwards, with an impromptu monitoring visit to the community indicating an increase in level of uptake and practice of health knowledge. With the introduction of the right health knowledge, the community members started to build a perception change that the risk factors for cancer, stroke...
and epilepsy were medical and empirical rather than following their traditional beliefs. In general, it was observed that mutual interaction between the health literacy provider and the community empirical evidence is vital before a health literacy intervention was applied, for the people to see and believe and in order to gain their confidence. Diagnostic evidence proving the diagnosis of cancer, hypertension and diabetes and the attending route causes was demonstrative and illustrations aided in individual decision-making for health-related issues. A health education intervention would begin with the scientific-cum-ritual relationship explanation that the evil spirit in the person with the infirmity is a tumour or elevated blood pressure or excess sugar in the blood. In our experience from feedback, health literacy becomes effective and sustainable if the right explanation on the causes of disease is made to the community members to dissuade them from a wrong notion that the causes of disease were linked to rituals and bad spirits. These are vital practical approaches to be built on in order to attain sustainable development across communities in Africa.

As encountered in preliminary interactions with these communities, this intervention approach has the potential for success, as acceptance for the intervention was created by an interactive needs assessment and by taking seriously and responding to the local population’s perception and narrative of their problem concomitantly with demonstrating the empirical evidence. It was also noted both among the Sayawas in Bauchi State, Nigeria and the Bikoms in the North West regions of Cameroon the importance of being aware of the communities’ adoption of their local language used for describing NCDs, for example, cancer, diabetes, cardiovascular diseases etc. Accordingly, it was noted that interventions for health literacy and promotion must always be built first on the ‘available local health knowledge’ that might, for the most part, differ from what researchers and health literacy providers would consider as evidence or knowledge.

Our experiences as described above also suggest that health literacy, knowledge and capacity are evolutionary systems, evolving with time and space. This was why a more individual interaction was deemed important. For this purpose, we used a One Resource Learning laboratory (ORLlab), a one health resource community-based education and empowerment programme in which a health literacy baseline for NCDs is mapped in context with local perceptions, customs and traditions, and a joint community needs assessment done by each individual in the community.

**Intervention approach of the One Resource Learning laboratory**

In this section we state that the ORLlab was a sustainable intervention approach to curb rising incidences of NCDs in Africa. We also provide an example using this model.

The ORLlab team had meetings twice a month between members of a local community (Boyo County) and experts in the respective fields of nutrition and
NCD prevention. During a workshop setting, members were encouraged to educate themselves (using their own dialect) about NCDs, and to discuss critically and come up with their own creative solutions to the local health problems they faced, as a community and as individuals.

Over the course of about six months one ‘wave’ of members from the target population became experts in the respective fields and skills acquired. For instance, in one case scenario it was generally noticed that mental and psychiatric health disorders among widows were high and escalated due to loss of properties and estates to the heir of the deceased. Many widows noted that their husbands had died mostly due to NCDs, which, at the time of death, had been attributed to poor understanding of NCDs, with the cause of death presumed to be witchcraft or sorcery.

These participants went on to educate the next ‘wave’, enabling interactive, intergenerational learning. The creation of people’s sense of belonging and responsibility for the health of the whole community was considered crucial in this learning format, which lasted for three years (2014-17), and was considered successful as children’s awareness was visibly raised. It was noted through interactive visits, for example, that there was more awareness about diabetes, sickle cell disease, breast cancer and mental health.

Health literacy interventions for NCDs across Africa can only succeed and be cascaded on to the next generation if they are built on evidence rather than on assumptions or generalisations. This evidence should not only encompass scientific ‘knowledge’ that can, in some cases, be biased or undergo changes, but also the experience and perceptions of the respective target population, and the dynamics of the population as well as its structure and diversity. This invariably means that theoretical models and findings are not deemed valid if they have not been validated in practice – in Africa, more than 50 per cent of theories and models in health literacy and interventions are yet to be practised by individuals and communities.

Furthermore, published material in the Cochrane Library, Google Scholar and PubMed and other databases mostly describe models that do not come from the context of Africa and may not yield sustainable results. Sympathetic and statistically convincing as this material is, it may not be suitable in meeting the health literacy needs of people in low- and middle-income earning countries, as these studies and models are mostly linear.

The ORLlab provides a unique platform for assessing discrete choice preferences in health literacy needs and interventions. It provides room for interventions to be effective and comprehensive, enabling target populations to secure the ability to change. This is the kind of strategy to apply if SDGs are to be met in Africa.

In the ORLlab, interactive experience shows that local people defined sustainability as the sine qua non of their culture. From the communities we interacted with, they noted that their local diet, local foods and their traditional governance were sustainable. According to them, these things had been in existence from time immemorial, and would continue to be so. This implies
that if the conceptual meaning of health literacy (not the literal definition and translation) is to be incorporated into the traditional way of life and local languages, it should be cautiously weaved into the traditional way of life, both now and for the next generation. This is the perspective to be considered in the control of NCDs in Africa and to meet the SDGs.

With levels of literacy comparatively low in Africa, and on a continent with more than 250 ethnic groups and languages, achieving health literacy for NCDs is a daunting task, especially among older people who are not literate, but who are, however, traditionally literate in their own customs, local calendar and dialect. The ORLlab will potentially address these limitations. While literacy itself might not be a prerequisite of health literacy and health-literate behaviour, it might still facilitate a learning process related to health. Health-related content can be transferred verbally (that is, without adequate literacy). Accordingly, it is possible to educate people about NCDs without them being literate. The long-term sustainable impact of the ORLlab is that it can enable the transmission of (health) information without requiring interaction with an expert. Accordingly, learning processes can also be initiated by non-verbal (for example, written) pieces of information that reduces the time an expert needs to ‘invest’ before achieving a desired level of knowledge or awareness in a target population.

Conclusion

The ORLlab can help to improve health outcomes in context of NCDs, reduce barriers to healthcare services and improve uptake of and access to interventions and programmes. Further research on how local customs pose a risk to the rising incidence of NCDs and the building of discrete choice interventions strategies could reduce not just the incidence of NCDs in the foreseeable future, but may also reduce inequalities and optimise the level of individual responses to seeking healthcare. This chapter has highlighted that the ORLlab could serve as vehicle to meet SDG No 3 in Africa.

Health and wellbeing are essential to achieving sustainable development, and this is enshrined in the Shanghai Declaration on promoting health (WHO, 2017) and SDGs. To get the right policies implemented for the right health literacy intervention strategies, local realities and the right scientific knowledge of the medical problem must be taken into consideration. If this is not done quickly, subsequent policies will be predicated on wrong or inappropriate interventions that will be in unsustainable in the foreseeable future.

References


