

## Attaining the Sustainable Development Goals 3 Target for Diabetes in Africa: Some Sustainable Strategies to Contain and Overcome the Diabetes Epidemic

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### ABSTRACT

In 2000 the United Nations set up 8 millennium development goals (MDGs) in response to growing concerns about the wide inequality gap between rich and the poor countries to be achieved by 2015. But many of the MDGs could not be attained. A review of the MDGs was made and 17 sustainable development goals (SDGs) established. While the developed countries are striving to meet these goals, low income countries, especially in Africa are still to set up strategies for many of these, especially, those relating to diabetes prevention and care. The key concept of partnership can be used to further the chronic disease prevention and control agenda, especially given the emerging evidence on the socio-economic implications of chronic diseases. This paper sets out to examine how strategies in containing diabetes and diabetes risks factors epidemic can scale up the efforts of African nations in their quest to attain SDGs, far beyond 2030. Our discussion is based on the review of published evidence.

**Keywords:** Millennium development goals, Sustainable development goals, Diabetes, Africa, Sustainable strategies, Prevention, Globalisation, UN Resolution 61/225 for diabetes

### BACKGROUND

At the beginning of the millennium, the United Nations (UN) set up a programme named the Millennium Development Goals (MDGs) to improve on the quality of life of people in all continents. The 8 UN MDGs and associated targets were to be reached by 2015 [1-5]. This was in response to growing consciousness and unease about the wide gap between the rich nations and the remainders of the world in which two third of all people live in poverty [6]. Hence, the concern was to bridge the existing gap. Some of the millennium development goals set out was directly related to health care. The health-related MDGs focused predominantly on infectious diseases and on child and maternal mortality. These conditions are the leading causes of death and illness in the least developed countries, especially in Africa. However, demographic trends and health transitions, along with changes in the distribution of risk factors, have accelerated the epidemic of non-communicable disease like diabetes and its risk factors in all developing countries [7-9].

Amongst the nations of Africa are the so-called 'fragile states', known as countries where governments cannot or will not deliver care to the majority of its people. They are characterized by political instability, poor governance,

broken infrastructure, flight of talent, and the worst health statistics in the world [10]. Many of these countries, especially in Africa, have experienced conflict in one way or the other. It is very likely that the achievement of the Sustainable Development Goals (SDGs) [11] will be jeopardised if these countries go unaided in their quest to attain these goals. The UN Resolution 661/225 that established the MDGs had rekindled this and emphasized the need for the overview of strategies [12]. The SDGs too have had strategies developed to enable them attained a universal health coverage by 2030 [11]. But the double burden of disease prevails.

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Many African states, especially those of Sub-Sahara Africa contain an estimated 15% of the world's population, but host a disproportionate share of poverty and ill health [5]. They are home to about a third of the world's poor and have significantly worse health indicators than other low income countries; for example, child mortality in fragile states is almost twice that of other low income countries and the malaria death rate is nearly 13 times higher than elsewhere in the developing world [13]. On average, a third of people living in most African states are undernourished. This is twice the rate in other developing countries [14]. African states are responsible for a third of people living with HIV/AIDS, a third of maternal deaths, and half of under-five deaths [15,16]. At the same time that African countries face this burden of preventable communicable diseases, they also have the emergence of non-communicable diseases. Diabetes has an age-adjusted prevalence rate of between 1-10% in rural and urban areas [17,17]. The World Health Organization estimates that in 2000 there were 7.1 million people with diabetes in sub-Sahara Africa, and that by the year 2030 the number will have increased to 18.6 million [19]. The vast majority of this increase will occur in men and women aged 45 to 64 years old. Faced with these present difficulties it is likely that the health-related SDGs in African states will not be achieved by 2030 [12,20]. Amongst the constraints to meeting the health SDGs in Africa are poverty, poor governance, lack of will, lack of capacity, dilapidated health infrastructure, low morale amongst health workers, weak monitoring and evaluation, corruption, flight of talent, the existence of a chaotic and unregulated private sector [21-23] and the pressure from traditional medical practices [24]. These hold back the development of the health system, delivery of health services and effective distribution of aid destined to help ameliorate the quality of healthcare.

Poor governance and low level of trust between aid donors and recipient governments make state engagement difficult. Engagement is further complicated by the particularly fragmented and complex field of stakeholders, volatile and scarce aid resources and often highly politically tense contexts. Poor alignment of policies with recipient countries, and poor donor harmonisation leads to parallel and fragmented activities, and an uncertain policy environment. Ministries of Health in Africa often function poorly in terms of staff morale leading to poor health system development. How then can these SDGs be achieved within the scope of these challenges? We present some context-based strategies to overcome these challenges and suggest some requirements for attaining the SDGs for diabetes in Africa within the ambit of the African Declaration for Diabetes by African countries during the World Diabetes Conference in Cape Town in December 2006.

## INDIGENOUS CONCEPT OF DIABETES AND ASSOCIATED CHALLENGES

Health delivery in Africa is jeopardised by the numerous cultural barriers that underpin the provision of health care and the adoption of good quality of life practices by risk groups [25]. Amongst them are beliefs in witchcraft and ancestral causal effects on disease occurrence and treatment success. Within the perspective of diabetes and other chronic non-communicable diseases, it is believed that cures are readily available to all people and for all diseases [26]. Therefore, a cure for diabetes is thought to be available and scientists are simply not yet able to find it [22,27]. However, the trust developed for the effectiveness of Traditional African Medicine (African Ethno-medicine) in treating diabetes has been presented as the best alternative to biomedicine. People use this, with the great expectation that scientists will invent technology that will lift the barriers for a biomedical cure for diabetes.

Diabetes is preventable in the sense that its onset can be delayed. The risk factors are known and health systems identified which can contain the epidemic. But there is a common perception that diabetes (and its risk factors) is a disease of the elderly, a disease of affluence, a pleasant way to die and a personal liability, a curable disease, and a disease resulting from conflicts with witches and ancestors [22]. These perceptions are myths and the consequence is the argument that diabetes is not a disorder with which governments should necessarily be concerned when they have to face the challenge of eradicating infectious diseases. On the other hand, recent data have shown just how great the benefit to communities across the world might be by reducing diabetes risk factors, often by political interventions [16]. For such achievements to be obtained, it is required that governments feel compelled to do this by making strong political commitments [28]. The commitment requires a high level of awareness, given that there are numerous reasons why both the public and the medical professionals are less informed and unwilling to initiate action. These reasons all sum up to the fact that the benefits from prevention are perceived as illusive and not readily appreciated, the immediate demands of patients take precedence, the public is led by the media to focus on expensive modern technology. New treatments and discoveries and the conflicts between modern and traditional health systems further compound this. Another challenge lies with the conflict of interest emerging from commercial entities and health professionals, who may obstruct change for many diverse reasons. And lastly, the challenge and conflict between traditional medical practices and biomedicine for treating diabetes. These challenges go a long way to restrict the involvement and commitment of people and their states in affording and providing quality health care for diabetes.

## SUSTAINABLE DEVELOPMENT GOALS [11]

In September 2015, 193 world leaders committed to 17 Global Goals in order to achieve 3 extraordinary things in the next 15 years: end extreme poverty; fight inequality and injustice; fix climate change. The Global Goals for sustainable development could get these things done; in all countries and for all people. A set of 17 goals and 169 targets aimed at resolving the social, economic and environmental problems troubling the world. Covering the next 15 years, the SDGs replace the Millennium Development Goals (MDGs) which expired in 2015. Governments came up with the idea at the Rio+20 conferences on sustainable development in Brazil in 2012. A working group with representatives from 70 countries then drafted a proposed set of goals. At the same time, the United Nations ran public consultations around the world and an online survey asking people about their priorities for the goals. In the summer of 2015 governments negotiated a final version of the SDGs adopted by 193 countries at a September 25-27 summit at the United Nations in New York.

The MDGs experienced some achievements. The United Nations acknowledged that the MDGs led to successes including:

- A drop in the number of people living in extreme poverty by more than half, to 836 million in 2015.
- Gender parity in primary schools in the majority of countries.
- A decline in the rate of children dying before their fifth birthday by more than half since 1990.
- A fall of 45 percent worldwide in the maternal mortality ratio.
- Over 6.2 million malaria deaths averted and 37 million lives saved by tuberculosis prevention and treatment.
- Access to improved drinking water sources for 2.6 billion people between 1990 and 2015.

However, there was need for the SDGs to be established for global development to be assured and the gains from millennium development goals to be sustained. Around 800 million people still live in extreme poverty and suffer from hunger, with fragile and conflict-torn states experiencing the highest poverty rates. Between 2008 and 2012, 144 million people were displaced from their homes by natural disasters, a number predicted to rise as the planet warms, bringing more extreme weather and rising seas. Water scarcity affects 40% of the global population and is projected to increase. Some 946 million people still practice open defecation. Gender inequality persists in spite of more representation for women in parliaments and more girls going to school.

Meeting the SDGs will certainly usher in improvement in the world. The 17 goals aim to achieve these wider aims by 2030: end poverty and hunger everywhere; combat inequalities within and between countries; build peaceful, just and inclusive societies; protect human rights and promote gender equality and the empowerment of women and girls; ensure lasting protection of the planet and its natural resources; create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all [11,23]. These improvements are grounded on the Millennium development goals that ended in 2015. However, there are new and different aspects about the SDGs. According to the United Nations the SDGs go much further than the previous goals, because they address the root causes of poverty and pledge to leave no one behind, including vulnerable groups. Secondly, they also emphasize the need to urgently tackle climate change and protect the environment through a shift to sustainable consumption and production. Thirdly, the SDGs are intended to be universal, applying to all countries rather than just the developing world. And thirdly, they recognize the key role of the private sector in pursuing and financing sustainable development, in partnership with governments and civil society.

## HEALTH SPECIFIC GOAL

The third of the seventeen global goals is: ensure healthy lives and promote wellbeing for all at all ages. This goal has seven targets subsumed in:

- Reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
- End preventable deaths of newborns and children under five years old.
- End the epidemics of AIDS, tuberculosis, malaria, and combat hepatitis, water-borne diseases, and other communicable diseases.
- Reduce by one-third pre-mature mortality from non-communicable diseases.
- Strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- By 2020 halve global deaths and injuries from road traffic accidents.
- Ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs.

This third goal reminds us of the 1978 development goals which were strictly grounded on health and expounded the

Primary Health Care perspectives of health for all by the year 2000.

### FOCUS ON NON-COMMUNICABLE DISEASES

The SDG number 3 has Non-communicable diseases as one of its targets. The target states that the world will 'Reduce by one-third pre-mature mortality from non-communicable diseases' [11]. The indicators defined here are mortality rate due to CVD, cancer, diabetes or COPD between 30-70 years [23]. Some new indicators are well established but availability and quality might be an issue related to mortality caused by cardiovascular diseases, cancer, diabetes, road traffic and birth registration coverage.

### THE DIABETES PERSPECTIVE

The development partners have resolved and established a 3-point agenda that has to:

- Set strong and clear indicators on access to healthy food and physical activity within the Sustainable Development Goals;
- Ensure at least 80% coverage of essential diabetes medicines (including insulin) by 2025 and include a target date for full access within the Sustainable Development Goals;
- Include diabetes education (including nutrition education) in school curricula.

In April 2016, the African Diabetes Conference held in Yaounde, Cameroon and identified issues related to physical inactivity, growing obesity and nutritional inequalities that could affect efforts to contain the emerging burden of diabetes and diabetes risk factors. The World Diabetes Day 2016 on 14 November marked the launch of the International Diabetes Federation's School of Diabetes, a flagship initiative of the Federation to help address the gaps that currently exist in the provision of quality care for people with diabetes around the world.

### OVERCOMING THE CURRENT BARRIERS OF ACHIEVING THE SDGS TARGET FOR DIABETES

Emphasising on the practical aspects of aid delivery in African states: management, contracts, balancing service delivery with capacity building may be one of the ways to overcome the vices that hold back the efforts to achieve SDGs within the health arena of diabetes and its risk factors. The civil society is crucial for prevention because they represent lay persons, patients and the public. Until recently all these stakeholders have focused on singular roles as defined by individual organisations. Multi-level roles, joint ventures and consensual efforts are the effective ways to enable people achieve a longer and better life, through prevention and control of diabetes, its risk factors and complications. Achieving this requires bringing together all the stakeholders in African countries having and showing an

interest in diabetes. This approach is ideal because it involves governments, the public and patients. Advocacy, education, training and specific projects are vital ingredients for reaching these goals. Increasing awareness should go beyond the World Diabetes Day and emphasis should be spread out to engulf all strata of the society. Aspects of awareness should be built into the public and private media sectors in order to obtain a wider outreach. Bringing together government, civil society and patient-focused organisations to form a united force in tackling diabetes may help to streamline the dispersed resources for the interest of targeted risk groups.

### Containing the diabetes epidemic beyond 2015

Failing to reduce and reverse the epidemic of diabetes and diabetes risk factors is and will continue to jeopardise progress on achieving a wide range of the SDGs. It will not only thwart the direct objective of reducing the prevalence of diabetes, its risk factors and complications; but will also undermine progress in areas as unrelated as lowering poverty rates, ensuring that all children attend and complete six years of primary education, reducing child death rates and fighting the global NCD epidemic [11,29-33]. In view of the 2015 target date to attain SDGs, it is essential that the delivery of existing interventions for diabetes prevention and treatment, and mitigating social effects be considerably scaled up. This will help to reduce the negative effects of the epidemic on the other social and economic goals set by the world community and by individual African countries given that the most affected is the most economically viable age group [12,34].

The best chance of ultimately controlling the diabetes and diabetes risks factors epidemics will come from re-focusing the use of current and new preventive approaches and most importantly on investing on actions that will facilitate behavior and lifestyle changes. Models of the impact of even partially effective treatments with modest uptake estimate that the prevalence of diabetes and its risk factors can be reduced by reasonable proportions [35]. This could lead to millions of people protected from developing diabetes early in their lives. Part of the commitment to long term development and prosperity for the world's poorest countries in Africa must therefore include investing in these diabetes and diabetes risk factors prevention initiatives for the future. Governments, donors and civil society need to increase funds for diabetes prevention and build stronger political support, especially for the more commitment and involvement of African countries. The international community also has to take steps to promote industry participation and a more co-ordinated and active scientific effort and aid provision. Such actions are needed today, tomorrow and must be maintained in the years to come far beyond 2030 [11,36-38]. It is, therefore, time to think beyond 2030 if the SDGs for diabetes have to be attained in

Africa. **Figure 1** presents a model for attaining SDGs for diabetes in Africa.

### BRIDGING THE CULTURAL GAP THROUGH HEALTH SYSTEMS STRENGTHENING

The SDGs correspond to bridging the gap between rich and poor countries and this key concept of partnership can be used to further the chronic disease prevention and control agenda, especially given the emerging evidence on the economic implications of chronic diseases like diabetes and its risk factors [11,23,28,32]. For success to be achieved, this partnership must, most importantly, include civil society. In addition, the experience from developed countries can, with important adjustments and respecting cultural traits, be readily transferred to African countries. Some African countries build their health systems to provide prevention and control services to achieve key SDGs for infectious diseases, these same services could readily be used for chronic non-communicable disease prevention and control programmes. We therefore suggest that countries should build on the existing guidelines and protocols developed by WHO [10,22] and the International Diabetes Federation [38-41]. Emphasis should be made to apply the WHO's step wise approach to surveillance by setting up sustainable surveillance systems for chronic non-communicable diseases to collect information on major risk factors and setting up prevention and control systems to cope with their emergence. In addition, African countries without national programmes should make an effort to establish one within the framework of the global strategy for the integrated prevention and control of diabetes and other chronic non-communicable diseases, using the Global Strategy on Diet, Physical Activity and Health [36,42] as one of the main inspirations.

### GLOBAL COMMITMENT AND GLOBAL ENGAGEMENT

It is expected that the UN Declaration 61/225 [27] on diabetes will continue to have a great impact on African nations' strategies to tackling diabetes. It is believed that the MDGs have helped African governments to think in terms of tight and long-term targets, rather than focusing on immediate strategies. And the New Partnership for Africa's Development (NEPAD), a regional development initiative, anchored its framework on the MDGs, setting them firmly at the heart of Africa's development vision for the coming decade. But in 2019, there is no corresponding South-South initiative like that of NEPAD to drive Africa through to achieving SDGs. Rather, focus is on electoral processes and achieving electoral gains. So it is not only a question of increasing aid, but also ensuring that Africa embarks on a path to African initiated sustainable growth which at the same time limits the often distorting effects of growth on income distribution and investment on health care. Africa does not only need cash but better policies and improved

capacity to make good use of the available resources, both keys to achieving the SDGs.

### CONCLUSION

Although a clear framework for the delivery of healthcare is emerging, macro and micro-economics, environmental and behavioral changes, risk factor detection and control, acute and chronic care and rehabilitation are ingredients that can trigger change and make a difference. A strong international effort will encourage country-led initiatives in African states. Stakeholders must work together because no single organisation can achieve the SDGs target for diabetes and diabetes risk factors alone, especially since individual efforts will mean the dispersion of resources. However, the most powerful force for change to prompt overcoming and containing diabetes and its risk factors is grass root demand and compelling interventions. Initially, this demand should come from the public and then from the healthcare professionals, but these must be socially and culturally compelling and respect the socio-ecological settings of African states. A consideration of this nature will reverse any resulting backlash and foster the achieving of SDG 3 target for diabetes far beyond 2030.

### CONFLICT OF INTEREST

None

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### REFERENCES

1. UN General Assembly (2000) Resolution adopted by the General Assembly: United Nations Millennium Declaration" (A/RES/55/2). Fifty-fifth sessions.
2. UN Department of Economic and Social Affairs, Statistics Division (2005) Millennium development goals: Progress report. New York, NY: UN DESA. Available at: [http://unstats.un.org/unsd/mi/mi\\_worldreg.asp](http://unstats.un.org/unsd/mi/mi_worldreg.asp)
3. World Health Organisation (2005) Health and the millennium development goals. Geneva: World Health Organisation.
4. Rechel B, Shapo L, Mckee M (2004). Millennium development goals for health in Europe and Asia: Relevance and policy implications. Washington, DC: World Bank.

5. The World Health Report (2002) Reducing risks, promoting healthy life. Geneva: World Health Organisation.
6. Anyangwe SC, Mtonga C (2007). Inequities in the global health workforce: The greatest impediment to health in sub-Saharan Africa. *Int J Environ Res Public Health* 4: 93-100.
7. Unwin N, Sobngwi E, Alberti KGMM (2001) Type 2 diabetes: The challenge of preventing a global epidemic. *Diabetes Int* 11: 3-8.
8. Unwin N, Saker L, Mbanya JC, Alberti KGMM (2004) Non-communicable diseases in Africa. In: Parry E; Godfrey R; Mabey D; Gill G, ed. *Principles of Medicine in Africa*. Cambridge: Cambridge University Press.
9. Unwin N, Setel P, Rashid S, Mugusi F, Mbanya JC, et al. (2001) Non-communicable diseases in sub-Saharan Africa: Where do they feature in the health research agenda? *Bull World Health Organ* 79: 947-953.
10. Alberti et al
11. Hagopian A, Thompson MJ, Fordyce M, Johnson KE, Hart LG (2004) The migration of physicians from sub-Saharan Africa to the United States of America: Measures of the African brain drain. *Hum Resour Health* 2: 17.
12. United Nations (2018) Achieving the sustainable development goals in the least developed countries: A compendium of policy options: United Nations, New York. UNCTAD/ALDC/2018/4. Available at: <http://creativecommons.org/licenses/by/3.0/igo/>
13. Del Prato S (2007) A call to action - The UN Resolution on diabetes. 61: 1-4.
14. UNDP (2005) Investing in development: A practical plan to achieve the Millennium Development Goals. Overview. New York, United Nations Development Program.
15. World Health Organization (2003) World Health Report 2003: Shaping the future. WHO: Geneva.
16. Graham W, Hussein J (2003) Measuring and estimating maternal mortality in the era of HIV/AIDS. UN Population Division: New York.
17. Murray CJ, Lopez AD (1997) Regional patterns of disability-free life expectancy and disability-adjusted life expectancy: Global Burden of Disease Study. *Lancet* 349: 1347-1352.
18. World Health Organisation (2005) Preventing chronic diseases: A vital investment. WHO: Geneva.
19. Yusuf S, Reddy S, Ounpuu S, Anand S (2001) Global burden of cardiovascular diseases: Part II: Variations in cardiovascular disease by specific ethnic groups and geographic regions and prevention strategies. *Circulation* 104: 2855-2864.
20. Wild S, Roglic G, Green A, Sicree R, King H (2004) Global prevalence of diabetes: Estimates for the year 2000 and projections for 2030. 27: 1047-1053.
21. UN DESA, Statistics Division (2005) Millennium indicators database. New York, NY: UN DESA.
22. World Health Organization (2005) Health and the Millennium Development Goals. WHO: Geneva.
23. Allam Ahmed A, Emmanuel Cleeve E (2004) Tracking the Millennium Development Goals in sub-Saharan Africa. *Int J Soc Econ* 31: 12-29.
24. Nations Unies (2018) Rapport sur les objectifs de développement durable 2018. Publication des Nations Unies. Département des affaires économiques et sociales (DAES). Available at: <http://www.un.org/fr/publications/>
25. Awah P (2006) Diabetes and traditional medicine in Africa. *Diabetes Voice* 51: 24-26.
26. Leeder S, Raymond S, Greenberg H, Liu H, Esson K (2004) A race against time. The challenge of cardiovascular disease in developing economies. New York: Columbia University.
27. Awah PK, Unwin NC, Phillimore PR (2008) Cure or control: Complying with biomedical regime of diabetes in Cameroon. *BMC Health Serv Res* 8: 43.
28. Awah PK (2006) Treating diabetes in Cameroon. A comparative study in Medical Anthropology, PhD Thesis, University of Newcastle upon Tyne, United Kingdom.
29. Awah PK (2004) An ethnographic study of diabetes: implications for the application of patient centred care in Cameroon. *J Anthropol* 2014: 1-12.
30. Bellamy C (2004) The state of the world's children 2005: Childhood under threat. UNICEF: New York.
31. Case A, Paxson C, Ableidinger J (2004) Orphans in Africa: Parental death, poverty and school enrolment. *Demography* 41: 483-508.
32. Gertler P, Martinez S, Levine D, Bertozzi S (2004). Lost presence and presents: How parental death affects children? Berkeley CA, University of California, Haas School of Business.
33. Ainsworth M, Beegle K, Koda G (2000) The impact of adult mortality on primary school enrolment in Northwester n Tanzania. Africa Region, World Bank Working Paper Series.

34. Silink M; United Nations Resolution 61/225 (2007) What does it mean to the diabetes world? *Int J Clin Pract* 61: 5-85.
35. Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJ (2006) Global and regional burden of disease and risk factors: Systematic analysis of population health data. *Lancet* 367: 1747-1757.
36. Bartholomew LK, Parcel GS, Kok G (2001) Changing behavior and environment: How to plan theory- and evidence-based disease management programs? In: Patterson R (Ed.). *Changing Patient Behavior: Improving Outcome in Health and Disease Management*. Chicago: American Hospital Association Press/Jossey Bass.
37. Del Prato S, Horton E, Nesto R (2007) We have the evidence, we need to act to improve diabetes care. *Int J Clin Pract* 61: 9-15.
38. Goldstein BJ, Gomis R, Lee HK, Leiter LA (2007) Type 2 diabetes - Treat early, treat intensively. *Int J Clin Pract Suppl* 2007: 16-21.
39. Aschner P, LaSalle J, McGill M (2007) The team approach to diabetes management: partnering with patients. *Int J Clin Pract Suppl* 2007: 22-30.
40. American Diabetes Association (2002). Standards of medical care for patients with diabetes mellitus (Clinical Practice Recommendations 2002). *Diabetes Care* 25.
41. World Health Organisation (2005) Preventing chronic diseases: A vital investment. WHO: Geneva.
42. IDF Clinical Guidelines Task Force (2005) Global guidelines for type 2 diabetes. Brussels: International Diabetes Federation.
43. World Health Organization (1999) Definition, diagnosis and classification of diabetes mellitus and its complications. Report of a WHO Consultation. Part 1: Diagnosis and Classification of Diabetes Mellitus. Geneva: WHO Department of Non-communicable Disease Surveillance, pp: 1-59.
44. World Health Organization (2003) Screening for type 2 diabetes. Report of a World Health Organization and International Diabetes Federation meeting. WHO/NMH/MNC/03.1 Geneva: WHO Department of Non-communicable Disease Management.
45. Awah PK (2018) Stigmatisation and discrimination surrounding diabetes care in an African context: Examples from Cameroon. *J Diabetes Treat* 131.