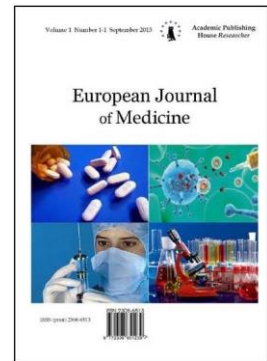


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Diabetes in West Africa: Using Meta-Ethnography to Synthesise Qualitative Studies in Ghana, Cameroon and Nigeria

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Abstract

The aim of this study was to apply meta-ethnography to synthesise qualitative studies in the area of diabetes care in Ghana, Cameroon and Nigeria. Full text qualitative studies were collected from several recognised electronic databases to select quality papers for the analysis. Controlling for all possible selection biases, we chose eight standard peer reviewed qualitative studies in the area of diabetes mellitus. Subsequently, we pragmatically applied the seven-stage procedure of Noblit and Hare to conduct a meta-ethnography. As a qualitative alternative to meta-analysis, the meta-ethnography approach allowed us to employ both induction and interpretation. Subsequently, the following five concepts: tripartite aetiology; healer choice; adherence; coping strategies; and discriminatory switch were derived. In addition, we also derived second-order and third-order interpretations from our synthesis. Although we do not intend to make any generalisation claim, our study offered to illuminate a more coherent story about diabetes care within the West African mind so far.

Keywords: Diabetes Mellitus, Diabetes Care, West Africa, Ghana, Cameroon, Nigeria, Meta-Ethnography, Qualitative Research.

1. Introduction

Diabetes mellitus (DM) is a chronic non-communicable metabolic disorder which is gradually becoming a global pandemic. Its pathophysiology is manifested by a state of hyperglycaemia, a syndrome of food nutrients' metabolism, which is due to poor insulin secretion, insulin action, or both ([American Diabetes Association, 2003](#)). DM prevalence is estimated by projection, to rise from 171 million people with DM in 2000 to 366 million by 2030 ([Wild, Roglic, Green, Sicree, & King, 2004](#)). Notwithstanding this, Africa is lagging behind in its diagnostic and holistic management protocols ([International Diabetes Federation \[IDF\], 2015](#); [Sarfo, 2014](#)).

Africa has more than two-thirds of its estimated cases of people with DM as undiagnosed, although no country or continent has successfully diagnosed every case of DM ([IDF, 2015](#)). When sub-Saharan Africa is evaluated on such claims, the picture becomes quite gloomy due to its lack of resources and poor governments' commitment to prioritise DM screening. The estimated statistics

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for sub-Saharan Africa shows an average percentage of 66.7 % people with undiagnosed DM as compared to 35.8 % in high-income countries (IDF, 2015).

The problem of undiagnosed and possible late DM case detection often leads to complications such as heart failure, retinopathy, chronic kidney disease, neuropathy and neuropsychological dysfunctions even after biomedical healthcare is finally sought. In addition, ignorant people with undiagnosed cases in sub-Saharan Africa fail to take healthy steps to manage their lifestyles or condition (Sabanayagam, Lim, Wong, Lee, Shankar, & Tai, 2010; Sarfo, 2014; Sarfo, Cudjoe, Fosu, & Schlatter, 2015; Sarfo, & Mate-Kole, 2014). Coupled with the undiagnosed and lately diagnosed DM cases, our synthesis is grounded the following key assumptions. To begin with, there are few researchers in sub-Saharan Africa who are keen to study DM cases. This has resulted in scarce or even missing incidence data on the DM case in sub-Saharan Africa. In addition to this huge research gap, only a few number of these DM studies from sub-Saharan Africa offer in-depth qualitative pictures of recent DM situations in the sub-Saharan Africa or West Africa to be specific (IDF, 2015).

Besides the paucity in qualitative data, the linkages among their results seem quite disjointed owing to the fact that some of these qualitative studies pay more attention to some constructs than others (Awah, 2014; de-Graft Aikins et al., 2012; de-Graft Aikins, 2005; de-Graft Aikins, 2004; Doherty et al., 2014; Ibrahim et al., 2015; Kiawi et al., 2006; Kratzer, 2012). Granting the disputed nature and criticisms labelled at most qualitative researches (Murphy, Dingwall, Greatbach, Parker, & Watson, 1998), a comprehensive synthesis of the few available quality studies in West Africa is crucial (Britten et al., 2002). Finally, there is a greater need for clinicians, educators, policy makers and stakeholders to know the existing frame of illness perception among persons with DM in the sub-region. This will help shape the focus of care to provide a more acceptable, holistic and convenient care vis-à-vis the sociocultural context (Sarfo, 2014).

Even though this paper is not meant to yield a generalizable theoretical explanation of the existing DM situation in West Africa, it brings to light a common cumulative cord of facts about the DM illness perceptions which is meaningful within their sociocultural context. The purpose of this study is to use meta-ethnography to synthesise a more coherent story of DM within the common West African setting.

2. Method

Sources of data

We searched Cochrane Library, MEDLINE (PubMed), MEDICAL SUBJECT HEADINGS (MeSH), Google Scholar, PsycINFO and African Journal Online (AJOL) to find all related studies. We combined keywords such as; “diabetes” or “diabetics” with “Cameroon”, “Ghana”, and “Nigeria”. Various related terms like “West Africa”, “sub-Saharan Africa”, “qualitative study”, “interview”, “health beliefs”, “adherence”, “self-management”, “lay perceptions”, “compliance”, or “self-care” were added to narrow down our search output.

Procedure

Discovering relevant studies was vital to our initial interest. Following online database searches, we reviewed titles and abstracts. We selected any abstract of a qualitative paper that might have studied DM in Cameroon, Ghana or Nigeria. We then downloaded the full-text copies of these selected abstracts controlling for all possible selection biases like author’s name, institutions and publishers. Afterwards, each author serving as an independent coder reviewed each paper for not less than three times. Other colleagues were passively and voluntarily involved in this process to enhance objectivity. The final decisions about inclusion/exclusion and quality assessments were made together following careful assessment of research goals and standards.

The general criterion we used for the synthesis was meta-ethnography as outlined by Noblit and Hare (1988). This is an alternate form of quantitative meta-analysis. Our synthesis was guided by the pragmatic perspective, as we followed systematic methods of induction and interpretation. This approach allowed us to translate selected qualitative researches into one another (Britten et al., 2002).

3. Results

Getting started

The first step in the process described by Noblit and Hare (1988) is '*getting started*'. At this stage, we formulated a good research question that could be answered by qualitative research. Our synthesis sought to answer the following research questions:

- (a) What are the concepts of DM within the three (3) West African countries?
- (b) What interpretations can be made from the key constructs?

These research questions guided our synthesis.

Deciding what is relevant to the initial interest

The next step was focused on '*deciding what is relevant to the initial interest*'. As defined by Noblit and Hare (1988), this is the point where we selected and determined the path of synthesis. In essence, it entailed; "*defining the focus of the synthesis; locating relevant studies; making decisions on inclusion; and quality assessment*" (Atkins et al., 2008: 3). It is noteworthy that there is little agreement on the issue of quality assessment of publications in meta-ethnography by researchers (Atkins et al., 2008). Nonetheless, our assessment of quality was pragmatic and essentially based on methodological strengths.

Studies were limited to (1) qualitative studies that were reported in English; (2) studies specific to samples from Cameroon, Ghana, and Nigeria [*interest for these 3 countries was based on IDF (2015) estimations and related risk projections*]; and (3) studies should have a 100 % to 50% DM focus. Based on this criteria, twelve (12) studies were initially included. We finally agreed on eight (8) papers but had little control on the distribution of studies across the 3 countries [i.e. Awah (2014) and Kiawi et al. (2006) from Cameroon; de-Graft Aikins et al. (2012), de-Graft Aikins (2005); de-Graft Aikins (2004), Doherty et al., 2014 and Kratzer (2012) from Ghana; Ibrahim et al. (2015) from Nigeria].

Reading the studies

At this stage, we did a careful '*reading of studies*' to become familiar with every detail and content (Noblit, & Hare, 1988). At this step, we tried as much as possible to appreciate the content of all selected studies. In addition, we started taking out 'metaphors' or emerging themes (Atkins et al., 2008). We took initial notes of emerging themes and agreed on their suitability before adding them. We also took record of the nature of study's sample, data collection and settings. This served as our foundation for explanations and interpretations studies (Britten et al., 2002). Table 1 shows the summary of selected papers.

Determining how the studies are related

The fourth step in the process described by Noblit and Hare (1988) was '*determining how the studies are related*'. At this step, we finally agreed on our generated themes. We also looked for their relationships and in some cases, we juxtaposed them. In all, five (5) concepts were eminent using Schutz's (1962) framework of first- and second-order constructs. Our 5 concepts included: tripartite aetiology; healer choice; adherence; coping strategies; and discriminatory switch.

The first concept which was the tripartite aetiology included the three-way causal attributions that were common to the West African settings. These included the '*natural myths*', '*natural facts*', and '*supernatural causes*'. The natural myths were natural causal or risk factors that had no scientific bases like being rich [*as in rich people's disease*], eating sugar or sweet things. The natural facts were natural risk factors that had scientific bases like taking alcohol, sedentary lifestyle, high fat food, obesity, and overweight. Lastly, supernatural causes like witchcraft, sorcery and ancestral curses were seen as the third causes (Awah, 2014; de-Graft Aikins et al., 2012; de-Graft Aikins, 2005; de-Graft Aikins, 2004; Kiawi et al., 2006).

The second concept was a person's healer choice at a given time. This included the biomedical and traditional health-care / faith healers. Some went in for one-at-a-time or both concomitantly. It should be noted that both providers seem to be equally valued (Awah, 2014; de-Graft Aikins, 2005).

The third concept was diabetes care adherence. This was viewed as compliance with biomedical diabetes care which could be stable and problematic adherence (Awah, 2014; de-Graft Aikins, 2005; de-Graft Aikins, 2004; Doherty et al., 2014; Ibrahim et al., 2015; Kiawi et al., 2006; Kratzer, 2012).

The fourth concept in our synthesis was coping strategies. These were the methods of adaptation during biomedical treatment. These included multiple coping approaches like adopting family support, religious coping, taking medication, and so on.

Finally, the fifth concept was the art of discriminatory switching among healers. This is the active or passive, but selective, back-and-forth moment between biomedical and traditional caregivers/faith healers. As noted by de-Graft Aikins (2005) as healer shopping, we introduced the term discriminatory switch to illuminate the conscious and selective act of ‘hopping’ from one caregiver to the other. This is often motivated by economic factors, need for cure rather than control, social factors, and caregiver attitudes. A tabular display of these studies are shown in [Table 2](#).

Translating the studies into one another

‘*Translating the studies into one another*’ involved the process of comparing one study’s themes and metaphors with the themes and metaphors in another study (Noblit, & Hare, 1988). We used “*a method of reciprocal translation by first arranging each paper chronologically*” (Atkins et al., 2008: 7). From there, we compared paper one with the second paper. Subsequently, both papers were compared with the third paper until all 8 were completed. Blank spaces were indicated with a minus sign [-] in [Table 1](#) to show the lack of germane information about concepts in a particular paper.

In [Table 1](#), we also included the second-order explanation for the specific papers while we made a synthesised second-order explanation for all the papers in [Table 2](#). In effect, our second-order explanation for all the papers indicates the following; (a) there are 3 main causal attributions determining succeeding health behaviours, (b) the desire for flexibility of care protocols and cure rather than control of diabetes are the hypothetical advantages that traditional caregivers/faith healers have over biomedicine, (c) the non-compliance to biomedical management is an alternative coping strategy and a ‘cost-benefit’ analysis outcome of persons living with diabetes, and (d) healer switching is a cognitive dissonance response to problematic adherence, treatment barriers and need for cure.

Synthesising translations

The next stage of our meta-ethnography was aimed at ‘*synthesising translations*’. During this stage, we advanced from reciprocal translations to a more complex level of synthesis; where we made use of third-order interpretations and constructs (Britten et al., 2002). Our interpretations were shared with researchers and clinicians who shared strong agreements. We came out with two (2) interpretations. These include; (a) biomedical care is as important as traditional health-care/faith healers among persons living with diabetes and (b) healer switching to alternative caregivers flourishes once perceived or actual biomedical care barriers increases.

Table 1. Completed Grid: Lay Meanings of Diabetes and its Care

Tripartite aetiology	Setting	Data collection	Sample	Methods and concepts
Natural myths, Natural facts, Supernatural	One urban and one rural health districts in Cameroon.	Observations, conversations, interviews, focus group discussions, biographies, case studies, and documentary evidence.	Community members, diabetes sufferers, Biomedical and traditional health-care providers.	Awah (2014)
Natural myths, Natural facts,	Four urban health districts in Cameroon.	Semi-structured individual interviews.	Community members.	Kiawi et al. (2006)
Natural myths, Natural facts, Supernatural	Two rural communities in Ghana.	Semi-structured individual and group interviews.	Persons living with diabetes and lay healthy people.	de-Graft Aikins (2004)
Natural myths, Natural facts, Supernatural	Two urban and two rural towns in Ghana.	Focus groups, interviews, and Ethnographical studies.	Persons living with diabetes.	de-Graft Aikins (2005)
Natural myths, Natural facts, Supernatural.	Three towns in Ghana.	Focus group discussions.	Lay people.	de-Graft Aikins et al. (2012)
-	Capital of Ghana	Individual and dyadic interviews.	Families with a child with Type 1 diabetes.	Kratzer (2012)
-	One urban community in Ghana.	Focus groups discussions and individual interviews.	Persons living with Type 2 diabetes and their caregivers.	Doherty et al. (2014)
-	Capital of Nigeria	Non-participatory observation, in-depth interviews and focus group discussion.	Persons living with diabetes and their healthcare providers.	Ibrahim et al. (2015)

Discriminatory switch	Coping strategies	Diabetes Care Adherence	Healer choice
Healer switching occurs once patients do not get desired results.	Multiple	Compliance with biomedicine is not very firm because it proposes control rather than cure.	Biomedical and traditional health-care providers were equally valued.
-	Multiple	Knowledge and resource availability affect compliance with biomedical care.	Determined by on knowledge and resource availability.
-	Multiple	Knowledge, social support, resource availability and cost affect compliance with biomedical care.	Rest on knowledge and availability and cost of resource.
Healer switching occurs once patients cannot cope with the cost and psychosocial burden.	Multiple	Cost and psychosocial burden determine compliance with biomedicine.	Biomedicine is more preferable although traditional health-care is vital.
-	-	-	Biomedicine is more preferable although traditional health-care is vital.
-	-	Knowledge, biomedicine cost and education affect compliance with bio - medicine.	Biomedical care and lifestyle reforms.
-	-	Sociocultural practices and knowledge affect biomedical care compliance.	Biomedical and lifestyle change.
Healer switching occurs once patients cannot cope with hospital barriers like waiting time.	Multiple	Hospital barriers and sociocultural beliefs affect biomedical care compliance.	Biomedical and traditional health-care providers.

Explanation/theory (second-order)	Biomedical care must consider patients' traditional health-care options in order to increase their compliance with care as traditional medicine offers high curative expectations.	Limited biomedical knowledge about diabetes coupled with lay representations and inadequate resources may affect the choice of diabetes care and compliance.	Combination of Biomedical, Psychosocial, and Spiritual / Religious concepts about diabetes, social support, resource availability and cost regulate patients' management practices.	Medical inaction and switching from biomedicine to ethno-medicine, and faith healing by patients is due to psychosocial impact of diabetes and the high cost of biomedical care.	Inadequate knowledge, level make persons to externalise their problems and thus, are less likely to adopt healthy practices in biomedical diabetes care.	Compliance with biomedical care is influenced by the cost of care and low level awareness.	Nutritional knowledge and sociocultural practices affect non-adherence to diabetes dietary regimens.	Persons with diabetes have complications because of hospital barriers and failure to follow regimen due to cultural beliefs.
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Table 2. Synthesis, Including Concepts and Second- and Third-Order Interpretations

Concepts	Second-Order Interpretations	Third-Order Interpretations
TRIPARTITE AETIOLOGY: causal attributions; natural myths, natural facts, and supernatural causes of diabetes.	<ul style="list-style-type: none"> • The three main causal attributions determine succeeding health behaviours. • Desire for flexibility of care protocols and cure rather than control of diabetes are the hypothetical advantages that traditional caregivers / faith healers have over biomedicine. • Non-compliance to biomedical management is an alternative coping strategy and a 'cost-benefit' analysis outcome of persons living with diabetes. • Healer switching is a cognitive dissonance response to problematic adherence, treatment barriers and need for cure. 	<ul style="list-style-type: none"> • Biomedical care is as important as traditional health-care among persons living with diabetes. • Healer switching to alternative caregivers flourishes once perceived or actual biomedical care barriers increases.
HEALER CHOICE: range of caregiver options; biomedical and traditional caregivers / faith healers.		
DIABETES CARE ADHERENCE: compliance with biomedical diabetes care; stable and problematic adherence.		
COPING STRATEGIES: methods of adaptation during biomedical treatment; the use of multiple coping approaches.		
DISCRIMINATORY SWITCH: selective, back and forth changes between biomedical and traditional caregivers / faith healers; motivated by economic		

factors; motivated by need for cure; motivated by social factors; motivated by caregiver attitudes.	
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4. Discussion

We used meta-ethnography to synthesise 8 papers to tell a coherent story about the concepts of DM within Cameroon, Ghana and Nigeria. We also provided second-order and third-order interpretations from the selected studies. It is evident from our synthesis that causal attribution of DM is a very essential determinant of future behaviour patterns and decision making. The state of DM in the sub-Saharan is quite alarming with increasing number of cases, undiagnosed and lately diagnosed cases (IDF, 2015). Together with poor compliance during care after delayed diagnosis are more likely to have negative effects on the individual and the nations as well (Sabanayagam et al., 2010; Sarfo, 2014).

In addition, the desire for flexibility of care protocols and cure rather than control of diabetes are the hypothetical advantages that traditional caregivers/faith healers have over biomedicine. This may sound speculative but will continue to serve a latent function in the scope of non-compliance until biomedical caregivers give it the necessary consideration (Awah, 2014; de-Graft Aikins, 2004; de-Graft Aikins, 2005; Kiawi et al., 2006). Moreover, the scope of non-compliance or non-adherence of the person with DM in these settings is to greater extent, an alternative coping strategy and a result of his or her treatment ‘cost-benefit’ analysis. A similar belief is seen among patients in the developed countries (Britten et al., 2002).

Once a person feels that his or her hopes of getting cured in a more flexible manner, is failing, a possible depressive mood and non-adherence to the DM treatment regimen are inevitable. Consequently, healer switching will continue as a cognitive dissonance response to such problematic adherence, high cost of care, low level awareness, treatment barriers like long waiting time at health facilities and patients need for cure. This result is consistent with the assumptions made in a meta-ethnography on drug non-adherence that, “*alternative coping strategies are not seen by patients as medically legitimate*” and possible “*fear of sanctions and guilt produce selective disclosure*” (Britten et al., 2002: 213). As seen in a meta-analysis by Gonzalez et al. (2008), non-adherence to the DM treatment regimen is significantly associated with depression. This finding is also supported by some recent studies in Ghana too (Sarfo, 2014; Sarfo, & Mate-Kole, 2014).

5. Limitations

Initially, we were of the anticipation that we would be able to obtain a more balanced distribution of papers across the 3 countries, however, our inclusion / exclusion criteria and quality standards could not permit this expectation.

Nevertheless, we did not see this as a greater challenge to our analysis as our research goals were not necessarily meant to compare and contrast the stories among these countries, but to produce a picture of the existing DM illness perception.

6. Conclusion

The trend as observed in our synthesis shows that persons living with DM and other lay community member attribute the causality of DM to three factors; natural myths, natural facts, and supernatural causes.

These illness perceptions are very essential determinants of future management behaviour patterns and decision making. Ignoring the other options to DM by biomedical caregivers is one of the reasons for non-compliance to the management of the condition.

It should be noted that DM Healer switching from biomedical to other alternative DM caregivers will continue to flourish in West Africa once the perceived or actual biomedical care barriers of clients increases.

It is hopeful that our potential readers appreciate importance of traditional health-care/faith healers among persons living with DM in Cameroon, Ghana, and Nigeria.

7. Recommendations

We recommend that governments in selected West African countries should strengthen their policies on improving early DM screening, holistic care and health education. Biomedical caregivers should also work at eliminating or reducing high cost of DM care, low level awareness treatment and other treatment barriers like waiting time, power imbalances between staffs and clients etc.

Likewise, biomedical caregivers should take into respect, the traditional health-care/faith healer options of persons with DM in order to provide the best health education, increase their compliance, and to also make informed decisions within their existing sociocultural context.

In addition, researchers can focus more in testing our third-order interpretations as hypotheses. These recommendations will enhance the future of health promotion and DM management in the sub-Saharan Africa.

8. Conflict of interest statement

The authors declare that they do not have any conflict of interest.

References

- [American Diabetes Association, 2003](#) - American Diabetes Association (2003). Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus (Position Statement). *Diabetes Care*, 26(1), 5–20.
- [Atkins et al., 2008](#) - Atkins, S., Lewin, S., Smith, H., Engel, M., Fretheim, A., Volmink, J. (2008). Conducting a meta-ethnography of qualitative literature: Lessons learnt. *BMC Medical Research Methodology*, 8(21), doi:10.1186/1471-2288-8-21.
- [Awah, 2014](#) - Awah, P. A. (2014). An Ethnographic Study of Diabetes: Implications for the Application of Patient Centred Care in Cameroon. *Journal of Anthropology*, Volume (2014), Article ID 937898, 1-12.
- [Britten et al., 2002](#) - Britten, N., Campbell, R., Pope, C., Donovan, J., Morgan, M., & Pill, R. (2002). Using meta ethnography to synthesise qualitative research: A worked example. *Journal of Health Services Research & Policy*, 7(4), 209–215.
- [de-Graft Aikins, 2005](#) - de-Graft Aikins, A (2005). Healer shopping in Africa: new evidence from rural-urban qualitative study of diabetes experiences. *British medical journal*, 331(737). doi: 10.1136/bmj.331.7519.737
- [de-Graft Aikins, 2004](#) - de-Graft Aikins, A. (2004). Strengthening quality and continuity of diabetes care in rural Ghana: A critical social psychological approach. *Journal of Health Psychology*, 9(2), 295-309.
- [de-Graft Aikins et al., 2012](#) - de-Graft Aikins, A., Anum, A., Agyemang, C. Addo, J., Ogedegbe, O. (2012). Lay representations of chronic diseases in Ghana: Implications for primary prevention. *Ghana Medical Journal*, 46(2 Supplement), 59-68.
- [Doherty et al., 2014](#) - Doherty, M. L., Owusu-Dabo, E., Kantanka, O. S., Brawer, R. O., Plumb, J. D. (2014). Type 2 diabetes in a rapidly urbanizing region of Ghana, West Africa: a qualitative study of dietary preferences, knowledge and practices. *BMC Public Health*, 14(1069), doi:10.1186/1471-2458-14-1069.
- [Gonzalez et al., 2008](#) - Gonzalez, J. S., Peyrot, M., Mccarl, L. A., Collins, E. M., Serpa, L., Mimiaga, M. J., Safren, S. A. (2008). Depression and Diabetes Treatment Non adherence: A Meta-Analysis. *Diabetes Care*, 31, 2398–2403.
- [Ibrahim et al., 2015](#) - Ibrahim, O. A., Foster, A., Oluleye, T.S. (2015). Barriers to an effective diabetic retinopathy service in Ibadan, Nigeria. *Annals of Ibadan Postgraduate Medicine*, 13(1), 36-43.
- [International Diabetes Federation, 2015](#) - International Diabetes Federation (2015). IDF Diabetes Atlas (7th ed.). Brussels, Belgium: International Diabetes Federation. Retrieved from: <https://www.diabetesatlas.org> on 09/05/2015.
- [Kiawi, 2006](#) - Kiawi, E., Edwards, R., Shu, J., Unwin, N., Kamadjeu, R., Mbanya, J.C. (2006). Knowledge, attitudes, and behavior relating to diabetes and its main risk factors among urban residents in Cameroon: a qualitative survey. *Ethnicity & Disease*, 16(2), 503-509.
- [Kratzer, 2012](#) - Kratzer, J. (2012). Structural barriers to coping with type 1 diabetes mellitus in Ghana: Experiences of diabetic youth and their families. *Ghana Medical Journal*, 46(2 Supplement), 39-45.

[Murphy et al., 1998](#) - Murphy, E., Dingwall, R., Greatbach, D., Parker, S., Watson, P. (1998). Qualitative research methods in health technology assessment: A review of the literature. *Health Technology Assessment*, 2, 167–198.

[Noblit, Hare, 1988](#) - Noblit, G.W., Hare, R.D. (1988). *Meta-ethnography: Synthesizing qualitative studies*. Newbury Park: Sage.

[Sabanayagam et al., 2010](#) - Sabanayagam, C., Lim, S.C., Wong, T.Y., Lee, J., Shankar, A., & Tai, E.S. (2010). Ethnic disparities in prevalence and impact of risk factors of chronic kidney disease. *Nephrol Dial Transplant*, 25, 2564–2570.

[Sarfo, 2014](#) - Sarfo, J.O. (2014). Role of clinical neuropsychologists in the evaluation and management of diabetes mellitus in Ghana: a position statement. *Journal of Advocacy, Research and Education*, 1(1), 37-40.

[Sarfo, 2014](#) - Sarfo, J.O., & Mate-Kole, C.C. (2014). Type 2 diabetes mellitus, depression and neuropsychological profiles among adults in Ghana. *European Journal of Medicine-Series B*, 1(1), 44-51.

[Sarfo, 2015](#) - Sarfo, J.O., Cudjoe, J., Fosu, A., Schlatter, M.C. (2015). Health-related quality of life indicators in Ghana: comparing Type 2 diabetic and control groups. *Journal of Advocacy, Research and Education*, 3(2), 135-145.

[Schutz, 1962](#) - Schutz, A. (1962). *Collected papers, vol 1*. The Hague: Martinus Nijhoff.

[Wild et al., 2004](#) - Wild, S., Roglic, G., Green, A., Sicree, R., King, H. (2004). Global prevalence of diabetes: Estimates for the year 2000 and projections for 2030. *Diabetes Care*, 27, 1047-1053.