



**Exploring diabetes management with
West-African immigrants living in the UK:
A constructivist grounded theory study.**

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Abstract

Exploring diabetes management with West-African immigrants living in the UK: A constructivist grounded theory study.

Background

Diabetes has become a global burden with Type 2 diabetes accounting for most of the burden of diabetes. Immigrant populations, especially African immigrants, are faced with a double burden of the condition, due to the high prevalence of Type 2 diabetes and the poorer management outcomes among this population. Although studies have explored Type 2 diabetes management among ethnic minority groups, there is a lack of research in the area of West African immigrants living with Type 2 diabetes. As a result, there is a need to explore the management process and experiences of these individuals living in Western countries. This study aims to contribute to addressing the gap in the literature by highlighting issues that are specific to this group.

Methods

A qualitative approach was used to explore the experiences of thirty-four West African individuals living with diabetes in boroughs of the London area. A constructivist grounded theory approach was adopted to construct the meaning of managing Type 2 diabetes to these individuals. Participants were recruited through Type 2 diabetes support groups and within the community using purposive and snowball sampling techniques.

Findings

A substantive theory of *normality: adapting to the new* in managing Type 2 diabetes among West African immigrants emerged. Three major categories *striving to adapt*, *finding out* and *living with it* from experiences of living with Type 2 diabetes were developed. These major categories influence their framing of normality in the process of Type 2 diabetes management in the UK. Cultural beliefs and practices stand out as important aspects of managing Type 2 diabetes

among this population in the UK. It is important that previous experiences of living in West Africa should not be separated from their current management of Type 2 diabetes in the UK.

Conclusion

The findings highlight the importance of centring the management of Type 2 diabetes on the cultural influences on lifestyle choices of these individuals as evidenced by their adapted strategies to living with diabetes in the UK.

Understanding normality for these individuals and how to support them in improving their Type 2 diabetes management is an important aspect for healthcare professionals to incorporate in management regime recommendations.

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Abbreviations

ADA	American Diabetes Association
BMI	Body Mass Index
Bp	Blood pressure
CASP	Critical Appraisal
CC	Constant Comparison
CCG	Clinical Commissioning Groups
CGT	Constructivist Grounded Theory
CGT	Constructivist Grounded Theory
CVDs	Cardiovascular Diseases
DH	Department of Health
DM	Diabetes Mellitus
GT	Grounded Theory
HBA1c	Haemoglobin A1c
HDL	High-Density Lipoprotein
IDF	International Diabetes Federation
LDL	Low Density Lipoprotein
NCDs	Non-Communicable Diseases
NDA	National Diabetes Audit
NHS	National Health Service
NICE	National Institute for Care and Excellence
NR	Not Reported
ONS	Office of National Statistics
PHE	Public Health England
PLWDM	People Living With Diabetes Mellitus
QDA	Qualitative Descriptive Analysis
QoL	Quality of Life
T1DM	Type 1 Diabetes Mellitus
T2DM	Type 2 Diabetes Mellitus
UK	United Kingdom
UN	United Nations
USA	United States America
WA	West Africa

WAls
WHO

West African Immigrants
World Health Organization

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Chapter 1 Thesis Introduction

1.1 Overview

This thesis relates to the understanding of the experiences of Type 2 Diabetes Mellitus (T2DM) management among West African Immigrants (WAls) living in the United Kingdom (UK). There is a need to gain further insight into the factors that play important roles in contributing to the experiences of WAls living with T2DM in the UK. This is needed because of health inequalities in relation to the immigrant population in the UK (Moody et al. 2016). Furthermore, the higher prevalence of T2DM among Africans than the general population in the UK has made it paramount for further research (Montesi 2016). Understanding these experiences can contribute to supporting this population with managing their T2DM condition.

In exploring the experiences of WAls in this study, a Constructivist Grounded Theory (CGT) approach was adopted to develop a theoretical explanation for the experiences of this population in the management of T2DM in the UK. The study recruited WAls from support groups and communities around London. Theoretical analysis was carried out on the data collected to generate theoretical explanations for the experiences of participants in this study. The findings were discussed in relation to the literature and health policies. Finally, the thesis concluded with conclusion, recommendations and implications for future research.

This chapter presents a general introduction to this study by discussing the research context. The focus of this study is presented before outlining the research problem and the arguments concerning the impact of migration on the health behaviours of immigrants. The outline of the thesis and summary of the chapter are presented at the end of the chapter.

1.2 Focus of this Study

Diabetes Mellitus (DM) is one of the fastest growing health conditions in the UK. African immigrants are reported to present with a higher prevalence of T2DM resulting in complications, than their country of residence's average prevalence (Diabetes UK 2016a; Tillin et al. 2013). The issues encountered by African

immigrants living with T2DM have previously been reported in studies (Ochieng 2013: Venters and Gany 2011: Brown 2007).

The literature review on T2DM management outcomes among African immigrants carried out in chapter 2 of this study revealed that most previous studies on Black-African immigrants categorise this population with other African descents using race. The use of race means Black-African, African American and Black-Caribbean are grouped together in most studies. In addition, most studies use quantitative approach reporting outcomes such as blood glucose level, blood pressure, cholesterol level measurements among White, Black and South Asian groups. It was found that Black groups were less likely to meet the control target measurement for these outcomes. This shows that T2DM management is poorer among the Black population, which makes them susceptible to complications from T2DM. The need to explore T2DM management process of these individuals is important to understand the challenges they experience. Understanding issues and concerns that are unique to this group during T2DM management might contribute to formulating effective interventions. Increasingly studies are becoming aware of complex factors that interact in the management of T2DM (Zafar et al. 2015). This is especially those beyond individual factors to factors outside the control of the individual. Some of these factors include social, economic, environmental, government policies and cultural factors (Bharmal et al. 2015: Gary-Webb et al. 2013: Hill et al. 2013). These highlight the importance of the environment in which individuals reside in the management of T2DM. Understanding the impact of determinants of health can be valuable for WAIs in the UK.

Although studies have reported factors that contribute to T2DM management, most focused on access to healthcare services, adherence to care services and patient-provider relationship (Brown et al. 2007: Ocheing 2012). There has been a gap in the literature in relation to T2DM management experiences among WAIs living in the UK. Furthermore, majority of the studies conducted among black ethnic minorities have recruited South Asians and Black-Caribbean (Zeh et al 2012: Johnson et al. 2011). This has led to the underrepresentation of West African Immigrants' perspectives in health research.

Majority of health systems globally and specifically in the UK structurally remain within the biomedical model of disease treatment and management. This issue has

resulted in a top-down approach to management of health conditions which are based on epidemiological studies and presenting solutions that reflected perspectives of healthcare professionals (Ogunlayi and Britton 2017; Mukamel et al. 2014). To improve the poorer T2DM management outcomes within Black and ethnic minorities especially among WAIs, there is a need to include community's lay perspectives in intervention design. This can only be achieved through research among WAIs.

In terms of focus on the UK, no study has used a qualitative approach to explore the experiences of African immigrants living with T2DM with the aim of developing a theoretical explanation for the management process. There is a need to fill this identified gap mainly due to the disparity in the health of this population and the increasing population of African immigrants in the UK.

In this study, it was decided to conduct qualitative research among WAIs living with T2DM in the UK. This study used in-depth interviews to understand meanings attached to living with T2DM within WAIs population. Understanding T2DM management before and after the migration of this population uncovered explanations for the poorer management as reported in the literature. Coping strategies employed in management after migration, Quality of Life (QoL), wellbeing perceptions and concerns were explored. The use of exploratory qualitative approach in this study is to address the limitations of previous studies' use of the quantitative approach. The rationale for the use of CGT qualitative approach for this study was explained in the methodology chapter (see section 3.8). This approach is expected to contribute to a better understanding of T2DM management among WAIs. This may assist health professionals to support individuals from this population. Before going into details on T2DM management as the focus of this study, a wider context of ageing and global health is presented.

1.2.1 Ageing and Chronic Diseases

Populations worldwide have witnessed improvements in healthcare delivery leading to increasing global life expectancy (Lubitz et al. 2003). These improvements are good achievements; however, they come with new health challenges.

Disease profile has changed from predominantly nutritional deficiency and infectious diseases to Non-Communicable Diseases (NCDs) that include DM, Cardiovascular Diseases (CVDs) and cancer, especially in developed countries (Beaglehole and Yach 2003). According to the World Health Organization (WHO) chronic diseases are leading causes of death worldwide and this rate is increasing globally (2013a). For example, DM caused 1.6 million deaths in 2016 that is 2.7% of all global deaths, this was up from 1.0 million deaths in 2000 (WHO 2013b: WHO 2018a). NCDs account for over 71% of all deaths globally in 2012, increased from 60% in 2000 (WHO 2013b: WHO 2016: Bennett et al. 2018).

In terms of regional proportion of deaths due to NCDs, High Income Countries (HIC) deaths are frequently due to NCDs (WHO 2013b). For example, in HIC, 7 in 10 deaths occur in ageing population of over 70 years (WHO 2013b). Deaths are mainly due to chronic diseases like CVDs, cancers, dementia, chronic obstructive lung diseases and DM (WHO 2016). For example, CVDs alone accounted for over 17.92 million more deaths in 2015 (Roth et al. 2017). DM due to complications results in the development of CVDs, it is estimated that more than 50% of people with DM die due to CVDs particularly heart disease and stroke (Fowler 2011). In addition to DM and CVDs burdens, there is an increase in the projection of DM mortality globally (Mathers and Loncar 2006).

The increased life expectancy globally has resulted in an increase in the older population as more people are ageing. This is important as most chronic NCDs like DM, CVDs occur more frequently among older populations (Jackson and Wenger 2011: Yazdanyar and Newman 2009). This does not imply that these diseases are not present among the younger population. However, the risk of developing DM increases with age (Kirkman et al. 2012). As a result of the increasing life expectancy, there are higher numbers of older population globally which in turn increase the risk of developing DM. There is an increase in the burden and mortality rates due to NCDs in Europe and UK (Graciani et al. 2016: Murray and Lopez 1997). Focusing on DM and its prevalence can better provide context for the focus of this study.

1.2.2 Diabetes Mellitus Prevalence and Context

DM is a multifactorial disease that is caused by inadequate production of insulin by the pancreas or the body's inability to use the produced insulin (Röder et al. 2016; Hansen 2002). Insulin is the regulatory hormone that is responsible for the regulation of blood glucose (also known as blood sugar) in the body (WHO 2006). Inadequate regulation of blood glucose results in hyperglycaemia. Hyperglycaemia is a situation when blood glucose is higher than the average level. This condition can lead to DM if not regulated with pharmaceutical and / or lifestyle treatment therapy. People Living with Diabetes Mellitus (PLWDM) do not have the ability to adequately process glucose in the body thereby resulting in hyperglycaemia (Inzucchi et al. 2012). Globally, DM affected more than 382 million people in 2013 and it is estimated to reach 592 million people in 2035 (Guariguata et al. 2014). Currently, DM is estimated to affect approximately 422 million people globally (WHO 2016). It is estimated that between the year 2000 and 2030, there will be 37% increase in world population while DM diagnosis will increase by 114% (Wild et al. 2004). According to the International Diabetes Federation (IDF) DM prevalence was at 5.1% in 2003 (2003). Furthermore, DM prevalence increased to 6.6% in 2010 (IDF 2011). Currently, DM global prevalence is estimated to be over 8.5% (WHO 2018a). The WHO reported that DM is among the top ten leading causes of death globally (WHO 2018b). The impact of DM burden affects people's QoL, life expectancy, life of others and health systems (Trikkalinou 2017; Loukine 2012; Diabetes UK 2010; Halanych 2007). There are different types of DM; however, classifying the types of DM can be a difficult task. Classification is important in the diagnosis of the type of DM which also influences the treatment (s) prescribed. There are errors in the classification of DM during diagnosis (Seidu et al. 2014). Care is needed in the classification of DM as this affects treatment. According to American Diabetes Association (ADA), the different types of DM include Type 1 Diabetes Mellitus (T1DM), Type 2 Diabetes Mellitus (T2DM), Gestational diabetes and specific type diabetes (2018). However, T1DM and T2DM are the most common. T1DM is previously known as Insulin dependent, juvenile or childhood on-set. T1DM is mainly as a result of the lack or inadequate production of insulin by the pancreas, there is no conclusive known cause for T1DM and no conclusive preventive measure against the development of

the disease (ADA 2014). T1DM usually requires insulin injection therapy for the management of blood glucose level.

The other main type of DM is T2DM, previously known as non-insulin dependent or adult on-set (ADA 2010). T2DM is mainly due to the body's inability to use the produced insulin for the regulation of blood glucose. This might be due to the body's resistance to insulin. T2DM was known as adult onset DM due to its prevalence among adults. However, the increasing prevalence of the disease among children and teenagers has been reported (Wilmot et al. 2010). T2DM accounts for more than 90% of all DM cases (Clark 2014; Danaei et al. 2011).

Although DM can be asymptomatic for several years after manifestation, at advanced stages, symptoms can be noticed due to the condition (Simmons and Zgibor 2017). These can include but not limited to excessive urination, weight loss, fatigue, excessive thirst and vision impairment (McAulay et al. 2001). Symptoms that manifest are similar in all types of DM. However, symptoms can be less marked among those with T2DM (Clark et al. 2007).

Although DM has no agreed known cure by research community, several medications, lifestyle practices and biochemical agents can be employed to manage blood glucose level in individuals with the condition. T2DM management requires high input of lifestyle changes, behaviour modification, medication use, and the support of personal and family contribution (Reddy 2017; Baig et al. 2015; Mayberry and Osborn 2012). For example, participants were reported to go into remission after undergoing multiple lifestyle interventions within clinical setting (Dave et al. 2019; Lean et al. 2018). This highlights the importance of lifestyle modification in the management of DM. Beyond the increasing prevalence of DM globally; the burden of T2DM due to complications is a public health concern.

1.2.3 Type 2 Diabetes Mellitus Complications

Beyond the symptoms experienced when living with T2DM, the condition places a significant burden on health and QoL of affected individuals (Goodwin et al. 2010). Impact of T2DM can affect both physical and psychological well-being of people living with the condition and their families. T2DM is linked to several complications that in effect increase morbidity and mortality and reduce the QoL (Deshpande et al. 2008). Complications in living with T2DM can result as outcome of improper

management regime. Complications because of living with T2DM are usually long-term which can lead to severe damage to all aspects of body system (WHO 2016). These can be microvascular in nature such as retinopathy, neuropathy, and nephropathy conditions (Fowler 2011). T2DM complications particularly affect nerves and blood vessels. For example, micro-vascular complications like retinopathy and neuropathy are also associated risk factors for nerve disorder (Kostev et al. 2014). T2DM retinopathy occurs because of accumulated damage to blood vessels in the retina of the eye and is a major cause of blindness (Fowler 2011: WHO 2011a). Nephropathy causes kidney failure because of T2DM complications and leads to the need for dialysis in patients with this complication (Fowler 2011: WHO 2011a). Similarly, the condition is associated with macrovascular complications such as stroke and heart diseases and limb amputation (Chawla et al. 2016: Fowler 2011). Furthermore, mental illnesses such as depression and suicidal thoughts are also associated with complication outcome of living with T2DM (Pramod et al. 2017: Lin et al. 2010). In general, individuals with T2DM are two folds more likely to die due to complications than their peers without the disease (Roglic et al. 2005). Treatment and management of these complications can lead to increase in economic spending in the management of T2DM (Meeto 2014).

1.2.4 Global Diabetes Mellitus Economic Burden

DM complication burden goes beyond mortality and morbidity to financial cost globally. As stated earlier, the high prevalence of DM is a global issue that affects all nations. To put the economic burden of DM into perspective, it is estimated health expenditures on DM is estimated to be US\$1.31 trillion. More than two thirds is lost as direct medical cost (\$857 billion) and one third as indirect cost such as productivity (Zhang and Gregg 2017: Bommer et al. 2017). It is estimated that countries are spending 5-13% of their health budget on DM which is expected to increase by more than 30-34% in 2030 (Zhang 2010). Focusing on DM in the UK shows a similar increasing trend in the prevalence of the condition.

1.2.5 Diabetes Mellitus in the UK

Like the global trend, DM prevalence in the UK has been on the increase. In the late 1990s, only 2% of the UK population were living with DM and less than 5% of the

health budget spent on DM and its complications (King et al. 1999). The National Diabetes Audit (NDA) calculated DM prevalence to be 4.67% equivalent to 2.35 million among the general population in England alone (NDA 2013). However, the Public Health England (PHE) reported the prevalence of DM has increased to 6.8% in the UK (2019). It is estimated that 15-16% of all deaths in England occur because of DM and its complications (Roglic et al. 2005).

In addition to this high prevalence of DM among UK population, it is estimated more than 500 thousand cases are not diagnosed which is equivalent to 18.94% of all DM cases (Tamayo et al 2014: NDA 2013). Furthermore, the number of PLWDM is predicted to increase by more than 30% in the UK by 2025 (IDF 2006). Although the increase in DM has been attributed to better awareness, monitoring and diagnosis, DM remains important public health issue in the UK that requires urgent intervention for all populations. Complications due to DM account for one in five cases of all cardiovascular admissions in the UK (Diabetes UK 2010). In addition to the increasing prevalence of DM in the UK, there is high rate mortality due to the condition. More than 75,000 deaths are associated with DM in the UK, exceeding the expected mortality rate for such condition by more than 24,000 deaths (NDA 2011). It is estimated that the UK spends over £23 billion on DM both directly and indirectly. The direct financial burden of DM to the economy is estimated to be £9.8 billion which is approximately 10% of UK's health budget as direct cost and this is expected to increase to £15 billion in 2025 (Diabetes UK 2016b: Hex et al. 2012). In addition, about £13.9 billion as indirect cost (Meetoo 2014: Hex 2012).

Although the healthcare system in the UK is of high standard and efficiency, DM is increasingly a public health concern because of the health inequality posed by the condition (Moody et al. 2016). Although DM can affect anyone, foreign-born individuals are, however, disproportionately affected when compared to UK's general population (Moody et al. 2016: Chow 2012). There is the need to explore the impact of migration on the health of immigrants.

1.2.6 Type 2 Diabetes Mellitus Management Policies in UK

A policy is any agenda that involves the government, organisations and communities with the aim to improve aspects of life. Policy usually have a goal to achieve and can be from local, national and international level (Merrick 2013). Several stages are involved in the formulation and implementation of a policy. A policy is more effective

when it focuses on target audience and have proper planning phase to implementation according to the policy cycle (Figure 2.2).

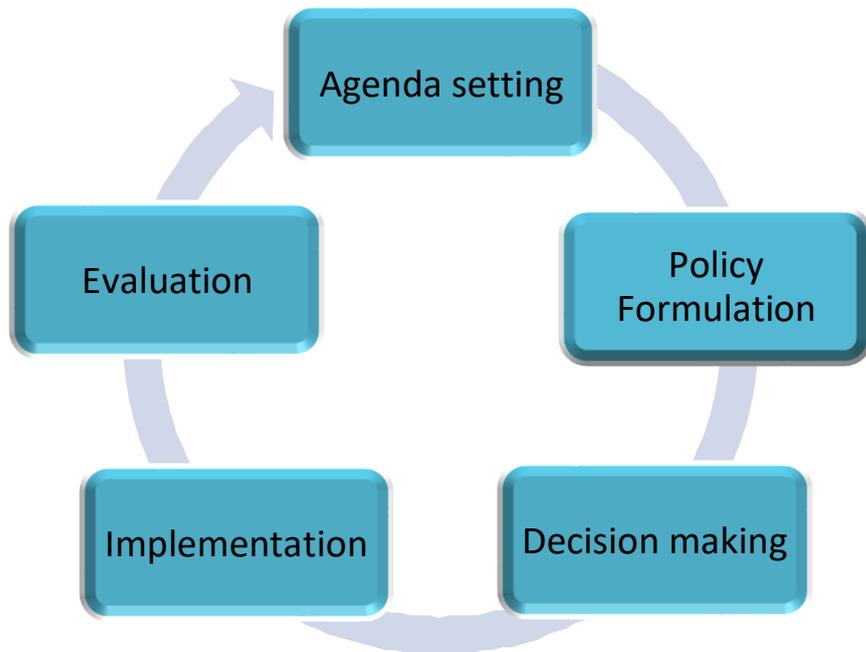


Figure 1-1 Policy Cycle

Adapted and Modified Knill and Tolsun (2012).

In relation to T2DM, several policies are in operation in the UK with the aim of supporting individuals living with T2DM. For example, the 'pay for performance' quality and outcomes framework focus on helping people get a threshold of 5mmol/l for total cholesterol by general practices. Furthermore, work on prevention of T2DM under the NHS Diabetes Prevention Programme (DPP) was commissioned. This is to reduce the number of people progressing to T2DM by identifying high-risk individuals to reverse their diagnosis with T2DM (Penn 2018; Wise 2018). The planning guidance for 2017-2019 set how NHS would approach T2DM management for these periods. The framework includes improving uptake of structured education, improving the achievement of NICE recommended treatment target, new or expanded multi-disciplinary foot care teams and new or expanded diabetes inpatient specialist nursing services. Important programmes such as Diabetes Education for Ongoing and Newly Diabetes (DESMOND) and diabetes manual are national programmes for structured educational programmes for PLWDM (Davis et al. 2008; Ockleford et al. 2008). Locally, interventions for Health and Wellbeing Board (HBW) and NHS Clinical Commissioning Groups (CCGs) help to implement and shape these policies to meet needs of the target population (Naylor and Appleby 2012). The CCGs have contributed significantly to implementation of interventions in localities to shape the services of supporting people manage their condition. Several initiatives are commissioned in London such as year of care programme; general practice led integrated T2DM care, T2DM locally commissioned services, T2DM appointments via webcams and clinical commissioning for better outcomes (LSCN 2015). These local initiatives have contributed to supporting individuals living with T2DM in the London areas. Interventions need to address key health drivers such as social, cultural and environmental factors.

In the effort to ensure policy agenda are set and implanted, government agencies are set up to oversee the process of the policy. Department of Health (DH) established organisations such as NICE and NDA. The NICE provide national guidelines for the prevention and management of T2DM to healthcare professionals and public (NICE 2012a). Healthcare Quality Improvement Partnership (HQIP) commissioned NDA as working part of National Clinical Audit and Patient Outcomes Programme (NCAPOP) to deliver key T2DM statistics and information (Gatineau et al. 2014). In addition to these government agencies, charities are actively involved in the prevention and management of T2DM in the UK. An example of such is Diabetes

UK, which is a charity that works of funding research on T2DM provide accurate information for PLWDM and other stakeholders. Diabetes UK also train local members as diabetes champion with their communities (Diabetes UK 2019).

1.3 Migration and Health

This study addresses the issue of the health of migrants that migrate from Low-Income Countries (LIMC) to HIC. Migrants are defined as individuals that move from a native country to another country or in broader perspectives are individuals that migrate from one area to another within a country (Misra and Ganda 2007). For example, individual moving from rural habitat to urban habitat within a country is a form of migration. However, migrants in this study context are defined as people that move from one country to another for temporary or permanent residence.

It is important to consider the arguments surrounding migrant's health from literature and understand the migration and factors that contribute to the movement of people to other countries (Rechel et al. 2013). Global migration is on the increase with most of the migration from LIMC to HIC. There are currently more than 258 million international migrants (UN 2017).

Factors like transportation, economic activities and civil unrest are known as the push or pull factors that contribute to the increased rate of migration (Flahaux and de Hass 2016; Jedwab et al. 2014; Gagnon et al. 2009). There is an established relationship between migration and health of migrants (Rechel et al. 2013). However, there are different accounts of authors on the effect of migration on migrant's health. Some authors argued that migrants arrive into country of residence already at risk of developing diseases that are characteristic of their native countries (Burns et al. 2007). However, some studies argued that migrants do not necessarily experience a decline in health due to arrival in the country of residence. For example, Vandenheede et al. (2012) suggested that because most migrants, especially from LIMC, are coming from countries that are dealing with infectious diseases. Therefore, they present with non-communicable diseases, as these are more prevalent in country of residence due to low transmission of infectious diseases in country of residence. Question is asked in relation to Vandenheede's (2012) report on the effect of migration on migrant's health. This is because the rate of prevalence of some diseases like T2DM should be similar in all populations if it is because of the

disease that is common in the country of residence as argued by Vandenheede (2012). However, this is different as there is a higher prevalence of T2DM, its complications and mortality among migrants than the general population in country of residence.

Another argument is that most migrants are healthy on arrival but decline in health is recorded with increasing length of stay. Fakoya et al. (2008) argued that migrants arrive at country of residence healthy and start to experience a decline in health when they adopt the lifestyle of their new environment. This is because some diseases are more prevalent among migrants than the general population. For example, studies have shown that more migrants experience complications and mortality due to T2DM than indigenous T2DM patients (Deboosere and Gadeyne 2005).

Studies have shown that there is a trend in the cases of T2DM among Africans globally. Fedeli et al. (2015) conducted a study to determine the prevalence of T2DM among Italian and migrants in Veneto region of Italy. The study concluded that Africans especially from North and Sub-Saharan Africa had a higher prevalence of T2DM than the general population and recommended that ethnic-specific interventions should be formulated for this population group. Studies have reported lower T2DM prevalence among Africans in Africa than Africans in Western countries. For example, in a study, 0.8% and 2% in rural and urban areas in Cameroon while 8.5% in Jamaica and 14.6% among Africans living in Manchester, UK (Mbanya et al. 1999). Similar findings were reported by Cooper et al. (1997) who reported a prevalence of 2% in Nigeria, 9% in Jamaica and 11% in African immigrants in the US and UK. This shows that migration to developed nations contributes to and increases the risk of developing T2DM especially among African immigrants from African countries.

These studies show the importance of environmental and lifestyle change in the prevalence of T2DM among African immigrants that have migrated to HIC.

Immigrants with longer stay in country of residence may adopt the lifestyle of such country due to acculturation and this increases the risk of developing some of NCDs (Chiu et al. 2012; Ullmann et al. 2011). The “healthy immigrant’s effect” was used to describe the healthy health status of most recent immigrants in country of residence. The immigrant effect was coined because of the argued good health that new immigrants present earlier on arrival in the country of residence (Adhikari and Sanou

2012). However, coming to country of residence contributes to changes in the health status with increasing length of stay.

Further studies on the effect of migration reported environmental and particularly lifestyle factors contribute to the genetic background that predisposes Africans to increase development of T2DM and other non-communicable diseases (Yusuf et al. 2001). Evidence linking immigration and lifestyle changes and T2DM prevalence among African immigrants was found in the US (Osei et al. 1995). The study showed reported differences in insulin secretion and sensitivity. African Americans have higher insulin secretion but also higher insulin resistance when compared to Africans living in Africa in the study. The lifestyle changes lead to the development of T2DM through alteration of insulin secretion and sensitivity. African immigrants in France developed T2DM earlier than their counterparts in Cameroon (Choukem et al. 2014). However, Africans in Cameroon had poorer health outcome and complications than Africans immigrants in France. One explanation might be that Africans in Cameroon are diagnosed later than African immigrants in France, which might be due to limited health care resources in Cameroon. However, it can also be because lifestyle changes might have contributed to the earlier development of T2DM among African immigrants than Africans in Cameroon might. This further showed the effect of migration on the health of immigrants. However, before going into further discussions on African immigrants and T2DM in the UK, it is essential to explore the interplay between ethnicity and T2DM.

1.4 Ethnicity and Diabetes Mellitus

Ethnicity is a risk factor in the development of T2DM. Studies have linked T2DM to ethnicity with certain ethnic groups at higher risk of developing the disease than the general population (Davis 2008: Oldroyd et al. 2005: Abate and Chandalia 2001). Ethnicity is a concept that implies shared origin and social background of a group of people that can involve distinctive cultural customs and a language or religious beliefs (Bhopal 2006). Ethnicity is a complex social construct that influences personal identity, social relations and behaviour (Ford and Hawara 2010). Some members of certain ethnic groups are implicated in the development of T2DM. The diverse nature of the UK population has made the issue of ethnicity paramount in addressing T2DM prevention. According to Office for National Statistics (ONS)

there are White, Asian and Black groups as the major ethnic groups in the UK (2015). However, there are other ethnic groups with increasing population in the UK. Among these ethnic groups, studies reported high prevalence of T2DM among Asian and African immigrants (Diabetes UK 2016a: Greenhalgh et al. 2011: Barnett et al. 2006).

Reports of the high prevalence of T2DM among African immigrants in the UK have been recorded (Diabetes UK 2016b: Montesi 2016). This has been reported to increase with years of migration (Reuven et al. 2016). African immigrants are three times more at risk of developing T2DM than the general population (Meeks and Agyemang 2018: Diabetes UK 2016a: Tillin et al. 2013). This suggests that immigration has an impact on the health of immigrants and contributes to the higher prevalence of T2DM among African immigrants. There are health disparities among ethnic minorities compared to the general population in the UK (Wohland et al. 2015: Claydon et al. 2013). Much can be learned from the accumulated health experiences of immigrants in countries with high immigrants such as the UK (Fedeli et al. 2015). The National Institute for Health and Care Excellence (NICE) guideline document, recommends that there is a need for more research on barriers and facilitating factors in the management of T2DM among immigrants (NICE 2012a). However, studies conducted on exploring management of the high prevalence of T2DM among ethnic minorities have been inconclusive. There is a need for further studies on the relationship between ethnicity and prevalence of T2DM and its complications (Davis 2008). There is a need for better understanding of the health experience of immigrants to assist in effective measures to manage the disease. Due to the high prevalence of T2DM among the African immigrant population, this study is focusing on this population.

1.5 West African Communities

The high population of migration out of Africa due to pull or push factors has been described in (see Section 1.3). African immigrants are among the highest growing ethnic minority groups in the UK, this is particularly those from West African region (Flahaux and de Hass 2016: ONS 2015: de Hass 2008). A fifth of the foreign-born UK population was born in Africa, representing over 17% (1.3 million) of foreign-born population (ONS 2015).

African immigrants in the UK are also very diverse in language, cultural practices and ways of living in general. There are White Africans from the South Africa region and the Arab African descents that are from the northern region of the continent with different ways of life. Decision to focus on WAIs for this study was due to the diversity of African immigrants. In addition, due to the need to focus on relatively similar population groups to avoid recruiting wider Black communities such as the Black-Caribbean, WAIs were only recruited. This was to reduce the differences encountered among participants in this study in terms of their ways of living with T2DM. WAIs are individuals that migrate from West African countries in Africa to the UK. West African countries include; Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Cote d'Ivoire, Equatorial Guinea, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo (see Figure 1.1).



Figure 1-2 Map of West African Countries
Adapted Fage and McCaskie 2019

One important reason for focusing on WAIs is that they are among the highest and fastest growing population in Europe and the UK (de Haas 2008), with high representation in London and some other areas in the UK. According to the ONS (2015), Nigeria has high population of immigrants in the UK. Nigeria is among the top-ten contributors of foreign-born residents in the UK, accounting for about 2.5% of the foreign-born population in the UK (ONS 2015). Nigeria and Ghana account for majority of the immigrants from West Africa (WA) in the UK (ONS 2015). All other countries from WA contribute smaller population to the immigrant population in the UK. Majority of these countries speak English; French is also popular in this region of Africa after English as the official language due to the colonial influence. Other West African languages include Yoruba, Igbo, Hausa and Fulani (Gut 2014). This study was conducted in English for easy communication. Both Nigeria and Ghana have English as their official and most popular language. Although Nigerian and Ghanaian immigrants were mainly recruited to participate in this study, other WAIs encountered were encouraged to participate. There is a need to discuss the rationale for conducting this study with focus on T2DM.

1.6 Rationale for Study

Underpinning this study is the rising prevalence of T2DM among WAIs with poor management outcome. This study considers broad social and cultural factors that impact on the lived experiences of WAIs in relation to their T2DM management. Although this study considered individual perspectives in the management of T2DM, the findings go beyond individualistic approaches. The construction of knowledge that includes sociocultural impact on the management of T2DM among this population was carried out. This study explored formal settings such as T2DM support groups and informal settings such as community settings using informal networks. Recruiting in formal and informal settings provided a better understanding of the impact of providing information and knowledge in the management of T2DM among WAIs. Both recruiting settings contributed to exploring sociocultural factors in managing T2DM while also providing an avenue to understand the contribution of lived experiences in T2DM management. The outcome of this study provided a theoretical explanation for the process of managing T2DM among West African population living in the UK. This contributed to sociocultural knowledge of this group

while also challenging studies based on the positivism paradigm that is popular in health research among African populations globally and specifically in the UK.

1.7 Research Setting

This study focused on individuals living with T2DM and originally migrated from WA to the UK. The data collection location for this study was based in London borough councils. Two major reasons influence the selection of this location for the collection. First, according to the London Strategic Clinical Networks (LSCN) there is a high population of WAIs in the London area (2015). More than 3.5 million immigrants live in London (ONS 2012). Second, there is a high prevalence of T2DM among residents of London of more than 475,000 (Verma 2018: LSCN 2015). These reasons make London the most suitable location for data collection for this study. T2DM prevalence in London ranges from 3.5% to 8.2% compared to 6.8% for the rest of England (Figure 1.2). Majority of PLWDM remain undiagnosed due to the asymptomatic nature of the condition (Jawad 2017: Ramachandran 2014). However, the estimate of diagnosed and undiagnosed prevalence of T2DM was reported at 8.9% in London compared to 8.5% in England. The PHE presented T2DM recommended eight individualised care indicators (blood pressure, body mass index, cholesterol, foot surveillance, HbA1c, serum creatinine, smoking and urine albumin) to be lower for people with T2DM at 47.4% in this region as compared to 58.8% for England (PHE 2019) (Figure 1. 2).

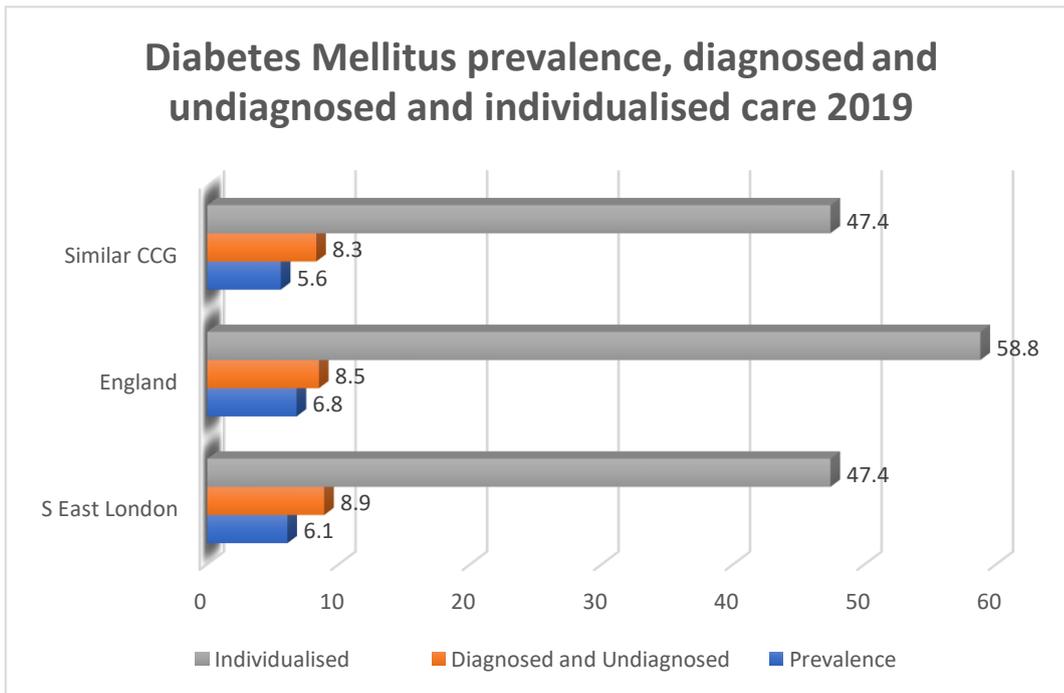


Figure 1-3 Diabetes Mellitus prevalence in South East London compared to England

Source: Public Health England (2019).

In addition to the high presence of minority groups such as WAIs, there are established community networks of WAIs in the location that assisted in the recruitment of participants for this study. This, therefore, provides an avenue for several interesting findings to contribute to the knowledge of managing T2DM among this population.

1.8 Purpose of Study

The purpose of this study was to explore T2DM management among WAIs to develop theoretical explanation from their experiences. This was based on the perspectives of these individuals in managing T2DM. The impact of lived experiences in shaping their current management of T2DM in the UK was assessed. The main impact of this research is to provide an understanding of cultural and other social factors that influence T2DM management process in the UK. This will be valuable for healthcare professionals that are working with these individuals to direct interventions towards important aspects of managing T2DM among WAIs.

1.8.1 The concept of Management in this study

It is important to discuss management as a concept in this study and how this concept was used throughout this thesis. In the literature, management of health condition is defined as the strategies adopted to proactively identify individuals with health conditions to develop interventions to slow deterioration and improve health (Goodwin et al. 2010). Also, management of health condition is explained to involve coordinated healthcare efforts and intervention while communicating with the patients in which patient self-care input is significant (Coughlin et al. 2006). Self-management is also popularly used concerning patient management of health condition. Self-management is described as the understanding of how disease condition affects patients' lives, providing their care, adapting lifestyles in response to change in symptoms and how they cope with the experienced symptoms (Corben and Rosen 2005). The focus of self-management is based on the strategies that individuals use in controlling their health condition. In the case of this study, this will involve the lifestyle strategies that are employed in the management or control of blood sugar level by patients living with T2DM. For the understanding of management in this study, it was decided to use "management" as a representation

of the experiences, lifestyle changes, environmental impacts that influence the strategies and efforts in controlling their blood sugar level and improving their health in general. In this way, the management focused beyond the lifestyle choices of individuals living with T2DM (self-management) but will also include factors within the environment that are outside the control of these individuals. Therefore, throughout this thesis, the concept of management was used to discuss lifestyle and environmental impact on T2DM control among WAIs living with the condition in the UK.

1.8.2 Anticipated Contribution to Knowledge

It was anticipated that there would be several contributions to knowledge from this study. This study contributed to knowledge by offering explanations based on lived experiences of T2DM management among WAIs. This offers insights into the challenges and issues concerning WAIs living with T2DM.

Using a qualitative approach, this study provided rich data that contributed to a better understanding of comprehensive experiences of individuals from West African population in the UK. The data gotten were valuable for understanding different factors that contribute to the management of T2DM among this population. The findings of this study were socially constructed; therefore, this will be valuable for designing health interventions and programmes for individuals from this population. The main aim of this study is to develop a theoretical explanation for the management of T2DM among WAIs living in the UK. Since there is no theory for the management of T2DM among this population, the findings of this study can be used as a template for a better understanding of T2DM management among these individuals.

1.8.3 Research Question

This study seeks to understand and contribute to knowledge in the management of T2DM among WAIs living in the UK. This was achieved by thoroughly exploring and examining the overarching research question using the appropriate method to uniquely address this management problem.

- What are the experiences of West African immigrants living with Type 2 diabetes mellitus in the United Kingdom?

Aim/ Objectives

- To explore Type 2 diabetes mellitus management processes among West African immigrants living in the UK.
- To explore the factors contributing to the management of Type 2 diabetes mellitus in the UK among West African immigrants.
- To understand the contribution of change in environment on the management of Type 2 diabetes mellitus among this population.
- To explore how the identified factors may influence each other and the management of Type 2 diabetes mellitus among West African immigrants.
- To develop a theoretical explanation for the management of Type 2 diabetes mellitus among West African immigrants living in the United Kingdom.

Answering this research question addressed the concerns highlighted in this chapter and met the purpose of this study. The following section outlines the structure of each chapter that makes up this thesis.

1.9 Thesis Organisation

This thesis is divided into eight chapters (Figure 1. 3). Chapter 1- Presents discussions on T2DM as a public health issue globally and in the UK. An overview of this study, the study purpose and research settings, finally the organisation of the thesis is presented.

Chapter 2- Presents the review of the literature in relation to T2DM management outcomes. In this chapter, studies reported outcomes of T2DM such as average blood glucose, blood pressure, and blood cholesterol and body mass index. Studies that report these outcomes among ethnic groups were included in the review with a specific focus on Black-African outcomes. The review compared the measures of Black-Africans with Whites and South Asian groups. This was done to highlight the performance of the African population in T2DM management process as compared to other major ethnic groups in Western countries. It revealed the gap in the literature, which was significant and highlights the need to carry out this study. The chapter also includes the findings from the included qualitative studies in the review

process. These studies provide some explanation of factors that influence T2DM management among the Black-African population.

Chapter 3- Deals with the methodology adopted to carry out this study. This methodology addressed the research questions generated for this study after a review of the literature to fill the knowledge gap identified. The chapter further presented the use of a qualitative research approach to and specifically Grounded Theory (GT) methodology to answer the research question.

Chapter 4- Section one- The study design, methods and tools for data collection and justification for the decisions made in carrying out this study were presented here. Discussion of the use of interview, observation and other sources of data used in relation to participant recruitment were presented.

Chapter 4-Section two- This section presents the analysis process carried out on the collected data for this study. The chapter presented initial coding, focused coding and the theoretical coding carried out in the analysis resulting in the findings of this study.

Chapter 5- Presented the findings of the study according to the emerged categories. Each category was explored with supporting excerpts from participants' transcripts. The chapter focused on the three theoretical categories that emerged from the data analysis.

Chapter 6- Focused on the identification of a core category that pulls all the other categories together. The emerged theory is presented with a storyline of the theory based on the narrations of participants.

Chapter 7- Presented a detailed discussion of the categories and core categories. It highlights the impact of this study's findings and meanings. The chapter concluded with a section on reflection and reflexivity of the researcher. This aspect discussed the role of the researcher in the research process.

Finally, chapter 8- Presented the conclusion, recommendations and implications of the study findings. Messages that emerged from the findings of this study were discussed. The contributions to future research were also presented.

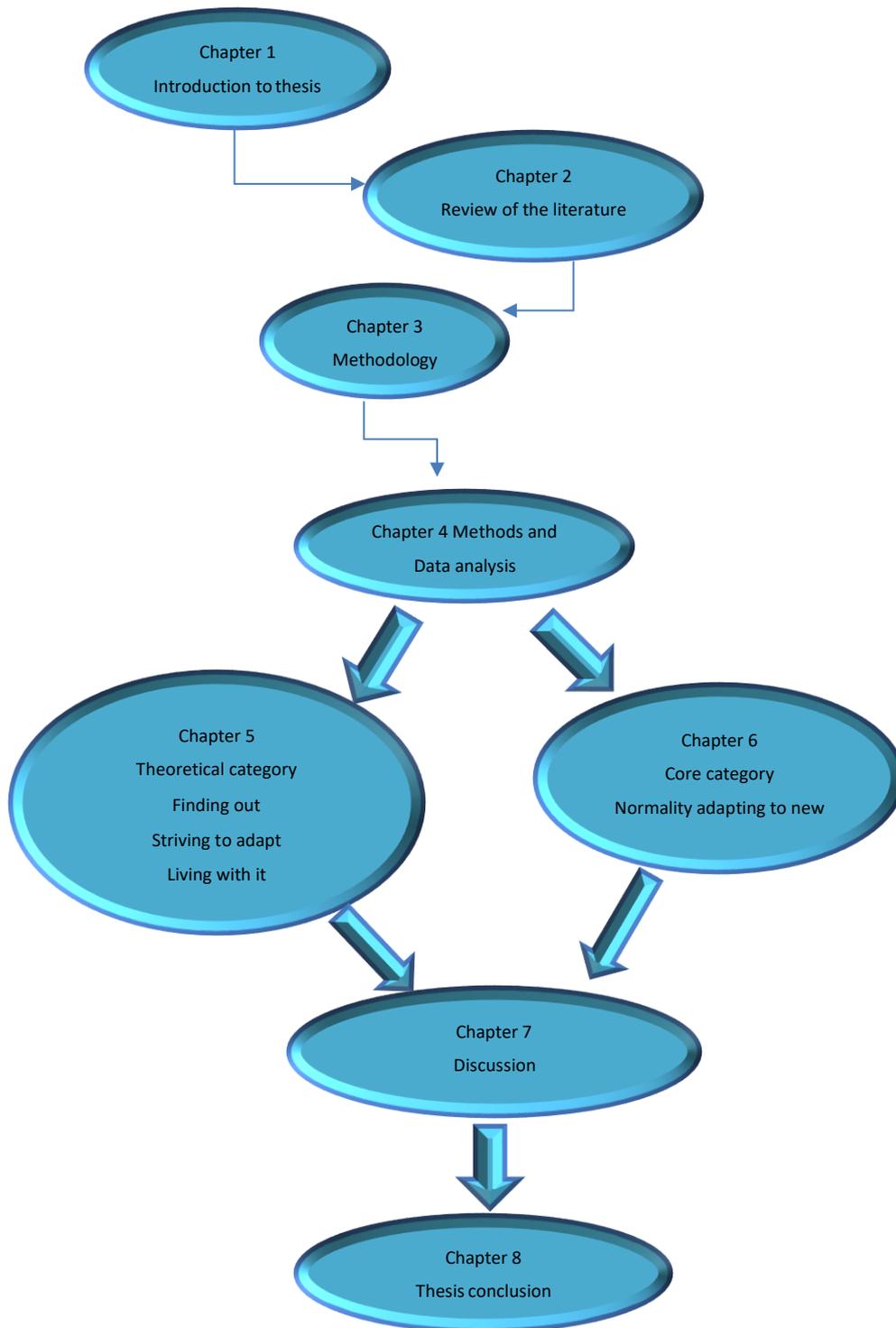


Figure 1-4 Outline of Thesis Chapters and Content

1.10 Chapter Summary

DM is a global issue that affects every individual living with the condition. The impact of the condition among WAs living with the condition requires exploration due to the high prevalence of the condition among this population. This study explored experiences of WAs living with T2DM in the UK. It provided findings that are unique to this population in terms of managing T2DM condition in the UK. Contributions to knowledge concerning factors that affect T2DM management have emerged from this study. This knowledge will be valuable for informing policy makers, healthcare professionals and research communities working on designing interventions for the management of T2DM among WAs in the UK.

Chapter 2 Review of the Literature

Systematic review of Diabetes Mellitus Management among Black African immigrants, White and South Asian populations

2.1 Introduction

This chapter presents a detailed search strategy that was used to retrieve relevant literature and how the literature were analysed. The chapter commenced with the search strategy employed in the review of the literature. The review is organised in two sections as both quantitative and qualitative studies were reviewed. The first section presents the quantitative comparison of T2DM management outcome among Black-Africans, Whites and South Asians. While the second section focus on the synthesis of qualitative studies in the T2DM management among Black-African immigrants.

Reviewing the literature consists of the systemic selection of relevant literature on the subject topic through critical analysis and summary of evidence in research papers and other literature by accredited researcher and scholars (Taylor and Procter 2008). The literature review followed a systematic approach to searching, selection of relevant articles as described by Aveyard (2014, p.15). Emphasis is placed on the importance of literature review in studies. As explained by Taylor and Procter (2008), literature review brings readers up to date with information on the research area and prepares the basis for the proposed study. In addition, Randolph (2009) explained that literature review allows a researcher to determine contributions the intended study will make to the research area. A literature review is essential in the discovery of new insights on important health issues, it also provides a broader picture that might not be visible when studying individual article alone (Aveyard 2014, p. 4). A literature review is central to dissertation writing and should be carried out thoroughly and comprehensively (Boote and Bollie 2005).

However, Maxwell (2006) argued that in support of the thorough and comprehensiveness of literature review, it is essential to select only relevant literature to the topic of interest. He further explained that the need to conduct a thorough literature review should not take away from the relevance of the review to the research topic. In line with this argument, the literature review was systematically conducted and covered articles that are of relevance to the topic of this study. This is

to emphasize that literature review is not a representation of all articles related to T2DM management but is focused on articles that are of relevance to the selected aspects of this study. This chapter finished by arguing that to date that T2DM management among African immigrants has not been fully understood. The role of their experiences prior to migration has not been adequately explored in the management of T2DM among this population. This review highlights the need for further research in the management of T2DM among African immigrants. To achieve the goals of this review, there is a need to establish the aim of the study to provide guideline for the review process.

2.2 Review Aims

The aim of this review was to highlight the differences in T2DM management among the three main ethnic groups in Western countries, which consisted of the Whites, Black-Africans and South Asian groups. This was done through understanding the management outcomes of T2DM among Africans as compared to whites and south Asians living in Western countries. Therefore, the review question was: How does the T2DM management outcomes of Black-Africans compare to Whites and South Asians in western countries? This question is focused on finding out the management outcomes of T2DM among Black-Africans as compared to the Whites and South Asians in Western countries. These Black-Africans are immigrant populations that are living with T2DM in Western countries. The main reason for this focus of the literature review is the reports on poor management of T2DM among this population. However, no review study has compared the outcomes of T2DM among these ethnic groups in Western countries.

To achieve the aim of this review, articles that focus on the T2DM management outcomes among ethnic groups were searched and retrieved. The outcome measures that were considered in the quantitative studies include T2DM prevalence, average blood glucose level, blood pressure, and blood cholesterol level and body mass index. A protocol was written and published in PROSPERO, an international prospective register for systematic reviews (see Appendix 1).

Objectives

1. To conduct a literature review on management outcomes of T2DM among Black-Africans in Western countries.
2. To compare the T2DM management outcomes among Black-Africans with Whites and South Asians.
3. To examine the facilitators and barriers to T2DM management among this population in Western countries.

2.3 Method

2.3.1 Search Strategy

In this section of the thesis, stages of searching for articles and retrieval according to the set inclusion and exclusion criteria are described. The Search, Appraisal, Synthesis and Analysis (SALSA) framework was adopted as a guide to carrying out the review. This SALSA framework is based on the principle of evidence-based medicine (Samnani et al. 2017). The four main processes of SALSA allow researcher to review studies while generating synthesis of findings from the included studies.

There are several types of reviews for reviewing the literature depending on the aim of the review, availability of resources, quality of resources (Samnani et al. 2017). These review types are presented with their strengths and weaknesses (Samnani et al. 2017: Grant and Booth 2009). Following the review types found in the literature, the review in this study follows the systematic review of the literature. This is mainly because this review aimed for exhaustive and comprehensive search of the literature on studies that report T2DM outcome measures among ethnic groups including Black-Africans (see Table 2.1). Therefore, this review was carried out following the SALSA framework on the processes of conducting a systematic review.

Type of review	Methods used by SALSA			
Systematic review	Search Aims for exhaustive	Appraisal Quality assessment may determine inclusion/exclusion	Synthesis Typically, narrative with tabular accompaniment	Analysis What is known, recommendations for practices? What remains unknown; uncertainty around findings, recommendation for future research
This Review	All identified databases were searched. Hand searching was done for hard copy articles. Grey literature was searched, notable authors were contacted for unpublished articles.	The use of inclusion criteria ensures that only articles that meet the criteria were included in the study. All selected articles were assessed for quality before reviewing.	The articles included in the review went through data extraction, the demography and key findings were presented in tables.	The review presented recommendations based on the findings from the study. Recommendations for practice and future research were discussed.

Table 2-1 SALSA Framework of Systematic Reviews

Adapted and Modified from: Samnani et al. (2017)

A literature review should generate broad patterns that are related to the study which can be used to “*critique earlier studies and theories and to make comparisons with these materials*” Charmaz (2006, p 164). This review then follows to lay broad patterns by searching related articles to this study.

Articles were retrieved using systematic search of major databases. Academic databases searched include: CINAHL Plus, Embase, Medline complete, Scopus, EBSCO Books, Science Direct, PubMed, and Cochrane Library. These databases were searched to allow more retrieval of articles, this is because indexing of articles can be different in some databases, and no one database is completely exhaustive of all literature (Booth et al. 2016: Aveyard 2014). These databases were searched as they have large pools of published articles. Furthermore, the advanced search option in the databases allowed easy and faster retrieval of relevant articles than general search engines (Aveyard 2014, p. 80).

It is essential that other forms of literature searches are used to retrieve articles as electronic sources alone cannot cover all relevant articles (Mattioli et al. 2012). Betrán et al. (2005) reported that 20% of relevant articles to their review were retrieved outside electronic database searches. Therefore, in addition to the database searches, other forms of searches were conducted to retrieve relevant articles for this review. Journals relevant to the topic were searched like *diabetes care, diabetologia, BMJ open diabetes research, ethnic minority health and care*. This was done to highlight important issues dealt with in relation to T2DM. This is a search method known as snowball searching as described by Greenhalgh and Peacock (2005).

To reduce publication bias, which is the tendency to publish positive research than non-significant negative research in the search, unpublished articles like thesis, and grey literature databases were also searched (Aveyard 2014, p.92). Grey literatures are articles that are not published by commercial publication companies and they can contribute to evidence in reviews (Paez 2017). Therefore, for a review to be comprehensive grey literature should be searched and relevant articles included in the review. This was done using google and particularly google scholar. Haddaway et al. (2015) highlighted the importance of google scholar in the grey literature search. In addition, google scholar, web of science was searched as they carry large numbers of articles and are easy to locate relevant articles. These search engines are good sources of search terms that can be used to retrieve more relevant articles

(Aveyard 2014 p.81). Government and professional websites like National Health Service (NHS) library, NICE, Diabetes UK and WHO database were searched to include relevant reports and articles that might have been missed in earlier searches. In addition, hand searching was conducted; references of relevant articles were looked through to retrieve any other relevant literature referenced in these articles. Authors that have published useful articles in T2DM studies among Black-Africans and ethnic groups were also searched for inclusion.

An initial search was conducted which included the following keywords with their synonyms: Type 2 diabetes mellitus, Black-African, immigrants and management were searched in all the databases listed above using the Boolean operators. Boolean operators were used in combining each keyword (Aveyard 2011: Cronnin et al. 2008). The review question was refined; keywords literature search method was used to retrieve relevant literature (Pautasso 2013). Keywords are essential, as these are words used to retrieve relevant articles from the databases. This is because journal articles are indexed with keywords (Aveyard 2014, p. 81). The keywords used in the retrieval of literature were gotten from the research question of this review (Winchester and Salji 2016). A thesaurus synonyms dictionary was used to identify more synonyms to each keyword. This is because authors use different synonyms of keywords in their articles (see Table 2.2 for keywords and synonyms searched). The first search had 60 hits before removal of duplicates, which reduced it to 40, and then when abstracts were read, 5 articles were retrieved for further scrutiny. These 5 retrieved articles were used to develop the review protocol, search terms, and inclusion and exclusion criteria (Alloh et al. 2018a). The paucity of articles as noted in the initial search made it necessary to expand the search, enabling retrieval of more articles for the review. After the initial search, keywords were searched on Medline using the Medical Subject Headings (MeSH) search option and all searched. This gave more options of search keywords synonyms which were further searched (Table 2.2). The Boolean operators, 'OR' and 'AND' were used to combine the keywords and their synonyms and searched. Truncation (*) was also used to explode each keyword, this was done to further increase the number of articles that were searched.

Search terms	
Diabetes Mellitus (S1)	“Diabet*” OR “Non-Insulin depend*” OR “Insulin resist*” OR “impair* glucose toleran*” OR “Dm2” OR “NIDDM” OR “Type 2 diab*” OR “Slow onset diab*” OR “Blood sugar” OR “Blood glucose”
Black-African (S2)	“Africa*” OR “Black*” OR “Race*” OR Afro* OR Afric*
Ethnic minority (S3)	BME OR Ethnic* OR Minorit* OR “Ethnic* Minorit*” OR migrant* OR immigrant*
Management (S4)	Manag* OR regulat* OR Control* OR maintain*
Search combination	S1 AND S2 AND S3 AND S4

Table 2-2 Search Terms with Synonyms

Inclusion and exclusion criteria were set to reduce selection bias (McDonagh et al. 2013). The inclusion and exclusion criteria were based on the research question of this study (see Table 2.3). This is to make sure that articles retrieved are relevant to this study and to ensure that researchers' selection bias and unsystematic selection of articles was avoided (Aveyard 2014, p.97).

Inclusion Criteria	Exclusion Criteria
Online articles	
Primary research	Review papers
Peer-reviewed	Not peer reviewed
Published between 2006-2018	Published before 2006
English written	Other language outside English
Considers T2DM in Black-Africans	Considers other diseases in Black-Africans
Compares T2DM management among ethnic groups	No reported ethnic group measures
Measures T2DM management outcomes	Report other outcomes aside T2DM management
Primary research: Qualitative, quantitative and mixed method studies.	Reports, letters, Editorials, Conference papers, Abstracts, Systematic reviews.

Table 2-3 Literature Inclusion and Exclusion Criteria

This table shows detailed selection criteria for each study before inclusion in the review process. The table explains criteria each study must possess to be included or excluded from the review. Each articles' abstract was read and assessed against this inclusion/exclusion criteria before it is finally selected to be included in this review. A detailed inclusion and exclusion criteria are presented (see Appendix 2).

2.3.2 Selection

The next step in the review procedure is articles selection; the results of the search were screened from the title, abstract and finally full text. A Preferred Reporting items for Systematic Reviews and Meta-Analysis (PRISMA) flow diagram was used to show the selection process of articles (Liberati et al. 2009). All articles' titles and abstracts were screened to assess their eligibility in meeting the inclusion criteria for the review. Details of the selection process are presented in Figure 2.1.

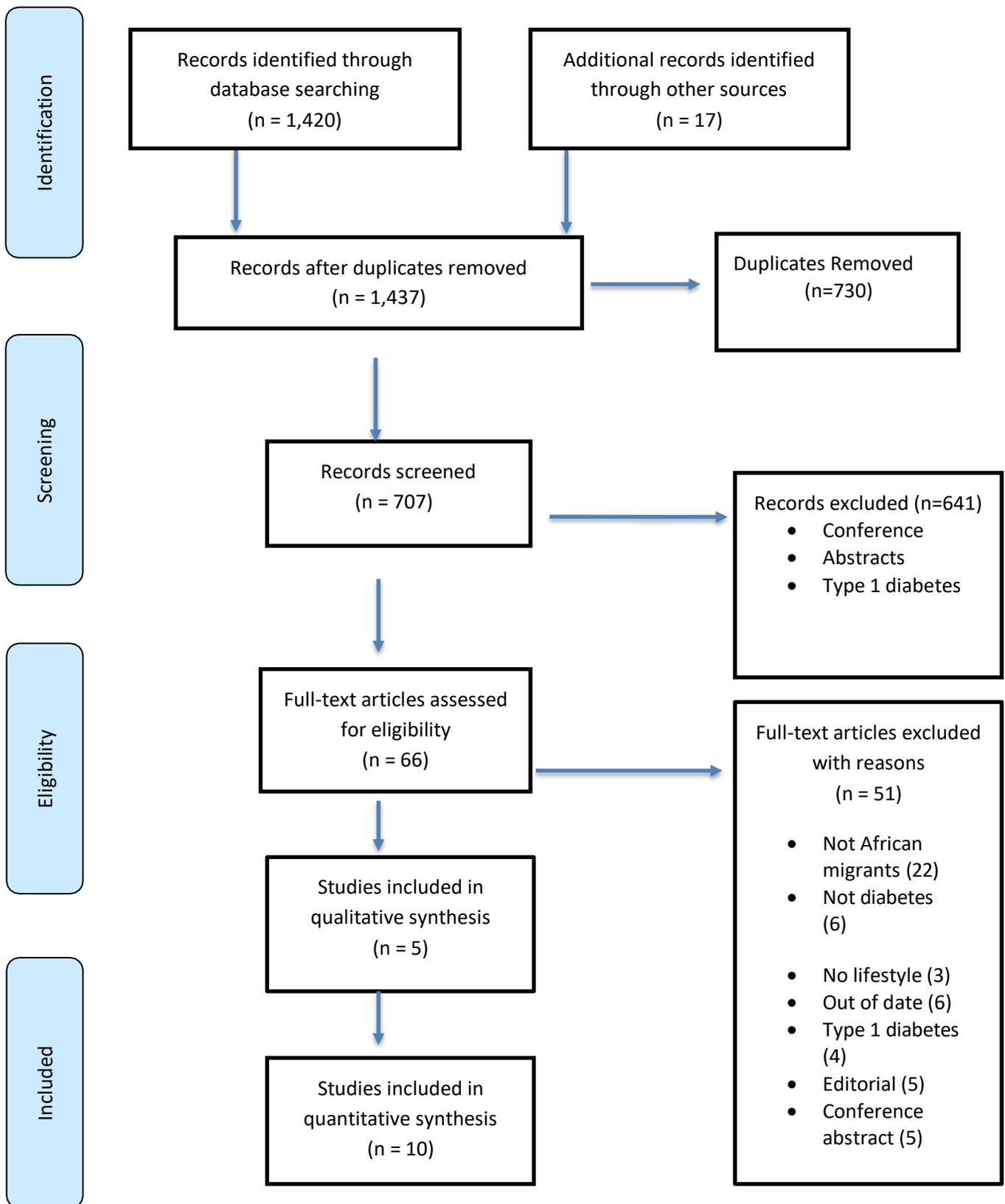


Figure 2-1 PRISMA Flow Chart

Adapted and Modified from Liberati et al. (2009).

PRISMA (Figure 2.1) was used to present the details of the literature search and article retrieval (Aveyard 2014, p.94). Retrieval of articles published after 2006, this is to allow retrieval of more recent and current studies to be included in the review. Hard copies of all 66 full-text articles were printed out for full screening. This was to for unbiased selection of articles included in the review and note taking on each article during appraisal. This led to the selection of fifteen articles in the review with five qualitative and ten quantitative articles.

2.3.3 Assessing the Quality of Papers

The next stage in the SALSA framework is the Appraisal of the articles that were searched and selected for review (Hewitt-Taylor 2017: Booth et al. 2016). Critical appraisal is a process that allows the systematic examination of a research method and findings to judge its trustworthiness, values and relevance to a context (Burls 2014). Mhaskar et al. (2009) stated that critical appraisal enhances a healthcare professional's skills to determine the credibility of research (free of bias) and its relevance to a context. It is important to critically appraise the literature for methods, tools and validity by researchers (Puddy and Wilkins 2011).

To access the quality of articles retrieved for review, quality assessment tools were used to appraise all retrieved articles. Critical Appraisal Skills Programme (CASP) tool (2014) was modified and combined with Long and Godfrey (2004) critical appraisal tool for qualitative studies. This was used to access the quality of the five qualitative papers retrieved before review. The two appraisal tools were combined to assess all aspects of the qualitative articles retrieved. CASP tool designed for cohort quantitative study was used to assess the quality of quantitative studies. This checklist was selected as it provides a structural approach to assessing rigour of the reviewed articles (Noble and Smith 2018: Smith and Noble 2016).

A score was assigned to each article based on how the study answered screening questions giving No = 0 and Yes = 1 (Farrance et al. 2016). Each study score was converted to the percentage of the total numbers of questions. No study had 100% of the screening score and no study was below 50%. No study was excluded based on quality assessment as they were of satisfactory quality. Data were extracted from these studies to be included in the review.

2.3.4 Data Extraction

Following the quality assessment of each paper, data were extracted using a data extraction tool. There are various types of data extraction tools that can be used in systematic reviews including paper, spreadsheets, email, web-based survey (Elamin et al. 2009). The type used depends on the availability of funding, time for review and number of reviewers on the project. Customised data extraction tool was developed to allow extraction of relevant information from each article using Microsoft word (Pedder et al. 2016). Data extracted include: the aim of the study, the type of research methodology used, demographic information of the participants, key findings and conclusions from the study (see Appendix 3). After data extraction from each article, the findings from each study were compared with the other studies and descriptively presented for each outcome measure reported.

2.4 Result-All Papers

Synthesis and analysis were carried out according to the SALSA framework (Hewitt-Taylor 2017; Booth et al. 2016). This is presented in the findings section of both qualitative and quantitative studies included in the review. Ten quantitative studies included in this review were all cross-sectional studies. Sample size ranged from 359 to 34, 359 with a total of 127, 273 total participants in all ten studies. All studies recruited participants that were 18 years and above. All the studies involved both male and female participants. Geographically, twelve studies were conducted in Europe with nine quantitative studies (Bijlholt et al. 2018; Snijder et al. 2017; Ballotari et al. 2015; Choukem et al. 2014; Fosse-Edorh et al. 2014; Abubakari et al. 2013; James et al. 2012; Verma et al. 2010) and three qualitative studies (Brämberg et al. 2012; Kohinor et al. 2011; Wallin et al. 2007). Three studies were conducted in America, one quantitative study (Wieland et al. 2012) and two qualitative studies (Kindara et al. 2017; Kahn et al. 2013).

2.4.1 Heterogeneity of African Population

The paucity of articles to be included in this study for review was mainly because of the lack of representation of Black-Africans in studies in general. Therefore, focusing

the review to articles that recruited Black-African immigrants excluded most of the studies that have been conducted in this area.

Studies on African immigrants in both the UK and the United States of America (USA) especially seem to use race as a form of classification of participants. In the UK, there was the inclusion of Black-Africans and Black-Caribbeans in the same category in research. However, there were differences noted among both groups that does not make them belong to same group in research. For example, the prevalence of T2DM is almost two times higher among Black-Caribbeans than among African immigrants (Diabetes UK 2015). The Black-Caribbean population are more likely to be born in the UK than African immigrants with more acculturation and integration than African immigrant (Goff et al. 2015: Agyemang et al. 2005). This is due to the cultural and social differences between the two groups. Differences such as language, diet, religion, geography, acculturation and socioeconomic factors are noted. These differences make contribute immensely to the management outcome of T2DM and combining these groups as one ethnic group can give imprecised and unreliable measures.

The sensitivity of lifestyle factor in T2DM does not allow for this kind of categorisation of participants by race. For example, in a study conducted by Goff et al. (2015) African immigrants are more likely to eat traditional diets than Black-Caribbean participants. In addition, the study reported Black-Caribbean diets to have higher sugar, beverage, fat and salt content than diets of African immigrants. Although most studies recruit Black-Caribbean participants, this cannot be generalised for African immigrant population. These are very influential factors in the management of T2DM (Chong et al. 2017: Cheng-Chiel 2012). This is camouflaging the knowledge gap within the literature on African immigrants and their lifestyle contribution in the management of T2DM. Already Afro-Caribbean is used as a term to represent Black-Africans and Black-Caribbean in studies.

Similarly, in the USA, it was noted that extensive research has been conducted in the USA concerning T2DM management among African American. However, studies in the USA like studies in UK categorised participants mainly based on race (Rodríguez and Campbell 2017: Spanakis and Golden 2013: Cabassa et al. 2011). The focus of many studies is around White, Black and Hispanic populations. The limited representation of African immigrant population was noted when details of the Black participant composition was analysed in most studies reviewed.

This categorisation made it difficult to retrieve articles with only African immigrant participants in studies carried out in the USA. Studies have discussed the heterogeneity within the African population (Commodore-Mensah et al. 2015; Agyemang et al. 2005). In general, studies on Black population do not adequately consider the heterogeneity within the African population. The influence of culture, lifestyle and genetic has been described in the determinant of health (Agyemang et al. 2005). These factors are different for each group within the African community and therefore more specific and defined criteria are needed to group Africans in healthcare research. These groups need to be defined and differentiated in research, as there are differences in migration circumstances, culture and genetic admixture of each group.

Although studies have already reported the similarities of ethnicity and race, these concepts are distinct from each other (Ford and Hawara 2010). The differences in these concepts should be considered in research especially for a diverse race like the Black race. Race is defined as a categorisation, which is a social construct and not biological reality (Malat 2002). Race was explained to be a classification that was defined before the development of modern genetic theory and was based on the work of taxonomists as this classification is based on phenotypical similarities (Gennaro et al. 2013; Hawara and Ford 2009). However, genetic variation within race has been shown to be often higher than the genetic variation between different races (Weiss and Lambert 2010).

Ethnicity, on the other hand, is different from race although some people do not differentiate between the two concepts (Moubarac 2013). Ethnicity is the grouping of individuals based on social relations and identity (Gennaro et al. 2013; Ford and Hawara 2010). Ethnicity plays key roles in dietary choices, socioeconomic status, religions, and what is viewed as important parts of life (Gennaro et al. 2013).

Ethnicity combines hereditary influences and social factors. Ethnicity is a broader construct than race which simultaneously consider heritage, cultural tradition, common history and religion (Holt et al. 2017; Wan and Vanderwerf 2010; Nagel 1994).

Moubarac (2013) in a review of studies that address health disparity found that British authors in the UK avoided the use of “race” and rather used ethnicity as a preferred categorisation of participants in studies. However, they still nonetheless

used a system that combined skin colour with the geographical/ country location in the same way as race categorisation.

Ford and Hawara (2010) argued that studies routinely compared racial groups without assessing interracial ethnic heterogeneity as this limit the ability to identify and understand sociocultural determinants of health disparity. Increasing ethnic diversity and mounting critiques of racial categorisation in research make the need to understand ethnicity crucial. Ethnicity is increasingly complex and central to the social life of the population and so improving the conceptualisation and measurement is crucial for advancing research on social determinants of health inequalities (Afshari and Bhopal 2010: Ford and Hawara 2010).

As earlier mentioned, lifestyle exploration requires more sensitivity in categorisation of participants in studies. Using categorisation based on ethnicity is better than using race; this is because ethnicity encompasses hereditary influences and social factors that contribute to lifestyle factors of a population. It is argued that studies that focus on lifestyle effect on disease condition, especially among diverse races like the Black race, need to use more specific and defined categorisation to recruit participants such as ethnicity instead of just the phenotypic categorisation of race. Therefore, the heterogeneity within the Black race was identified in this study and ethnicity was found appropriate as a form of categorisation and should be used for research among African descendants in HIC. This contributed to the challenges encountered in the analysis of the retrieved studies due to the categorisations of participants in studies.

2.5 Data Analysis

Understandings of ethnicity categorisation within this literature review were based on the original authors' concepts. The term Whites was used to refer to people from European or Caucasian origin. South Asia included people originating from Indian, Pakistan, Bangladesh, the Maldives and Sri Lanka, while Blacks was used to refer to people originating from African and the Caribbean. Ethnicity was established based on self-reported origin, country of birth or as indicated in hospital records.

Articles reported recruiting Blacks with no further clarification on the specific Black groups recruited. This is mainly needed due to the heterogeneity of Black groups. This presented a difficulty, as it was not made clear whether Black-African

immigrants that migrated from Africa or Caribbean that migrated from Caribbean countries were recruited in such studies. This issue of groupings made it difficult to select studies for review. Only two studies reported findings between Black-African and Black-Caribbean in separate categories (Ballotari et al. 2015: Abubarkar et al. 2013). This led to the presentation of biochemical outcome measures from quantitative findings of this review.

2.5.1 Biomedical Outcome Measure Targets

In the quantitative articles that were included in the review, T2DM prevalence, body mass index and three clinical outcomes were reported in most studies reviewed (HbA1c level, cholesterol level blood pressure and T2DM prevalence, body mass index,) while qualitative papers discussed the factors that might contribute to the clinical outcome measures. These outcomes were selected as they were mostly reported by most of the articles reviewed. In addition, these outcomes are used as the most accurate measure of T2DM management and indicators of biomedical outcomes of care (O'Connor et al. 2014: Elamin et al. 2009). Other measures like smoking, awareness, knowledge, self-management and complications were reported in some studies but this review will focus on T2DM prevalence, HbA1c, Cholesterol, Blood Pressure and BMI as indicators for management outcomes among ethnic groups.

Selecting these outcome measures as the primary focus of this review was based on several reasons. Firstly, this decision to focus on these outcome measures is due to the need to understand the management of T2DM among black-Africans when compared to whites and South Asians. This is needed because there has been no review that has presented the T2DM management outcome of black-African population group with White and South Asians. Secondly, these management outcomes are reliable clinical indicators of T2DM management (Elamin et al. 2009). Thirdly, it is difficult to measure the impact of other self-management behaviours such as smoking, awareness, knowledge on the outcome of T2DM. However, measuring outcome measures such as HbA1c, cholesterol, blood pressure indicates the outcome of both clinical and lifestyle management of T2DM among these groups. Using these indicators gives a holistic view of the management of T2DM rather than using only lifestyle behaviour impact such as smoking, awareness. Fourthly, majority

of the studies reviewed reported these management outcome measures makes it a better indicator of T2DM management to compare within the three groups. In reflecting on the suitability of these outcome measures, it was important to first have a measure of T2DM management outcomes among the black-African population as compared to Whites and South Asians. It is important to have evidence of management of T2DM among black-Africans as compared to Whites and South Asians to allow for addressing disparities among these groups. These outcome indicators are essential in this regard. Furthermore, this evidence of T2DM management among black-Africans as compared to Whites and South Asians will create a basis for the need to explore the management process of this population as later required in this study. Their management outcome measures in this review are indicative of issues concerning patients' management behaviour especially due to the poorer management among this group than Whites and South Asians. Different targets were used in the studies reviewed. For example, studies conducted in North American research mainly used the ADA and the IDF target recommendations; studies conducted in the UK used the NICE target recommendations while studies in Europe tend to use WHO target recommendations. The different biomedical outcomes that were recommended by different international health organisations have been presented as a guide to understanding findings from these studies reviewed (see Appendix 4). It was not possible to conduct a meta-analysis on the articles due to the heterogeneity of the data from the studies reviewed, particularly concerning target outcome measures used in each study.

2.5.2 Quantitative Results

2.5.2.1 *Type 2 Diabetes Mellitus Prevalence*

Type 2 diabetes mellitus prevalence was one of the results that were reported among studies reviewed. This was reported among four studies included in this review (Snijder et al. 2017; Ballotari et al. 2015; Fosse-Edorh et al. 2014; Dreyer et al. 2009). T2DM prevalence was higher among ethnic minority groups than White population in all four studies. The prevalence of T2DM was higher for both male and female grouping in minority groups over the White population. The lowest prevalence was reported among White group, followed by Black group and the highest prevalence was reported among South Asians in all studies. T2DM prevalence was

1.3- 4 times higher in Black groups than the Whites group. The highest prevalence was recorded among South Asians, T2DM at 2.2-7.3 times higher than the Whites. There was no consistency when participants were classified based on gender (see Table 2.4).

Type 2 Diabetes Mellitus prevalence (%)			
Authors	Black-Africans	South Asians	Whites
Ballotari et al. 2015	Male: 4.3 Female: 6.5 Black-Caribbean Male: 3.2 Female: 4.3	Male: 10.2 Female: 9.7	Male: 5.5 Female: 3.6
James et al. 2012	NR		
Dreyer et al. 2009	8	11	3.5
Snijder et al. 2017	Male: 14.9 Female: 9.6	Male: 21.5 Female: 12.2	Male: 5.0 Female: 2.4
Fosse-Edorh et al. 2014	Male: 12 Female: 17	NR	Male: 8.6 Female: 6.5
Wieland et al. 2012	NR		
Bijlholt et al. 2018			
Choukem et al. 2014			
Abubakari et al. 2013			
Verma et al. 2010			

Table 2-4 Type 2 Diabetes Mellitus Prevalence

NR = Not Reported

2.5.2.2 *Hba1c Measure Outcome*

HbA1c outcome measure was reported among the papers reviewed. Three papers (Choukem et al. 2014: Abubakri et al. 2013: Dreyer et al. 2009) reported mean HbA1c differences among ethnic groups studied. All studies reported higher mean HbA1c among ethnic minority groups than the White population. Although the difference is not statistically significant among minority groups and White population, Black-Africans had highest mean HbA1c values.

In addition to the mean HbA1c, control HbA1c was reported in eight studies reviewed (Bijlholt et al. 2018: Ballotari et al. 2015: Snijder et al. 2017: Verma et al. 2010: Fosse-Edorh et al. 2014: Choukem et al. 2014: James et al. 2012: Wieland et al. 2012). The control target differs among the studies with some studies using target of HbA1c < 7.0% (Bijlholt et al. 2018: Snijder et al. 2017: Verma et al. 2010: Choukem et al. 2014: Wieland et al. 2012. James et al. (2012) used HbA1c < 7.5% target and Fosse-Edorh et al. (2014) used HbA1c < 8% target, lastly Ballotari et al. (2015) reported the percentage of participants with HbA1c > 9%. Most studies reported higher percentage of HbA1c target met by White population than Blacks and South Asian (Bijlholt et al. 2018: Ballotari et al. 2015: Snijder et al. 2017: Verma et al. 2010: Fosse-Edorh et al. 2014: Choukem et al. 2014: James et al. 2012: Wieland et al. 2012). In comparison among Black-African immigrants in different European cities, Bijlholt et al. (2018) reported a higher percentage of HbA1c target met among Ghanaian immigrants in Amsterdam, Berlin (63.4% and 62.7%) than the percentage in London (40%). Interestingly, the percentage of HbA1c control target was similar in Rural Ghana as compared to immigrants in Amsterdam and Berlin while the lowest percentage was reported as 27.5% in Urban Ghana (see Table 2.5).

Authors	HbA1c outcome Measure	Black-Africans	South Asians	Whites
Ballotari et al. 2015	HbA1c >9% (%)	Male: 27.8 Female: 37.5	Male: 29.8 Female: 42.3	Male: 12.0 Female: 12.6
		Black-Caribbean Male: 50.0 Female: 28.6		
James et al. 2012	≤ 7.5%	49%	45%	52%
Dreyer et al. 2009	Mean	8.1%	8.0%	7.6%
Fosse-Edorh et al. 2014	≥ 8%	30%	NR	15%
Wieland et al. 2012	≤ 7%	40.7%	NR	53.9%
Bijlholt et al. 2018	≤ 7%	Amsterdam 73.3% Berlin 72.9% London 66.7% Urban Ghana 56.3% Rural Ghana 37.3%	NR	NR
Choukem et al. 2014	Mean	9.9% African immigrants 8.6%	NR	8.1%
Abubakari et al. 2013	Mean	8.33% Black-Caribbean 8.15%	NR	8.04%
	Percentage with HbA1c > 7% (%)	59		57

		Black-Caribbean 64		
Snijder et al. 2017	HbA1c ≤ 7% (%)	Male: 45.6	Male: 38.5	Male: 67.4
		Female: 54.0	Female: 38.2	Female: 47.1
Verma et al. 2010	1997	33.6	34.1	32.5
	2006	77.7	75.5	77.3
	≤ 7.0% (%) 1997	3.9	4.1	0
	2006	39.0	35.7	40.6

Table 2-5 HbA1c outcome measures

HbA1c = Haemoglobin A1C

NR = Not Reported

2.5.2.3 *Blood Pressure*

Blood pressure measure was reported in five of the studies reviewed (Verma et al. 2010; Fosse-Edorh et al. 2014; Choukem et al. 2014; Wieland et al. 2012; Dreyer et al. 2009). Higher blood pressure measure was reported among Black-Africans than other groups. Similarly, the percentage that met blood pressure target was lowest among Black-Africans than Whites and South Asians. Although blood pressure target was not significantly different among all ethnic groups in four studies, one study reported a significant difference (Choukem et al. 2014). Choukem et al. (2014) reported a similar percentage of participants with hypertension among Cameroonians and Caucasians (72% and 70%) respectively, while significantly lower percentage of 52% was reported among Cameroonian immigrants (see Table 2.6).

Authors	Blood pressure outcome measure	Black-Africans	South Asians	Whites
Ballotari et al. 2015			NR	
James et al. 2012			NR	
Dreyer et al. 2009	Mean (mmHg)	135.4/ 78.3	129.1/ 76.0	133.1/ 76.0
Fosse-Edorh et al. 2014	Self-reported Hypertension	57%	NR	60%
Wieland et al. 2012	≤130/80mmHg (%)	51.9%	NR	52%
Bijlholt et al. 2018			NR	
Choukem et al. 2014	Hypertension (%)	Cameroonian 72 African immigrant 52		70
	Mean Systolic Bp (mmHg)	Cameroonian 144 African immigrant 128		130
	Mean Diastolic Bp (mmHg)	Cameroonian 86 African immigrant 75		72
Abubakari et al. 2013			NR	
Snijder et al. 2017			NR	

Verma et al. 2010	(%)			
	1997	57.4	50.7	59.2
	2006	89.0	89.0	89.3
	≤ 140/80mmHg			
	1997	15.7	29.2	28.2
	2006	34.3	45.0	43.5

Table 2-6 Blood pressure outcome measures

Bp - Blood pressure

NR - Not Reported

2.5.2.4 ***Cholesterol***

Total cholesterol measure was reported in six studies reviewed (Fosse-Edorh et al. 2014: Choukem et al. 2014: Wieland et al. 2012: Verma et al. 2010: Dreyer et al. 2009). Although different cholesterol targets were used in these studies, Black-Africans were slightly lower in cholesterol target percentage than Whites. South Asians had the lowest among all ethnic groups. One study reported mean total cholesterol to be lower among Cameroonian immigrants than White participants (Choukem et al. 2014). In general, cholesterol difference was not significantly different among all ethnic groups in six studies (see Table 2.7).

Authors	Cholesterol outcome Measure	Black-Africans	South Asians	Whites
Ballotari et al. 2015		NR		
James et al. 2012	Total (Mean)	4.4	4.1	4.3
Dreyer et al. 2009	Total (Mean)	4.4	4.2	4.3
Fosse-Edorh et al. 2014	Self-reported hypercholesterolemia (%)	57%		56%
Wieland et al. 2012	LDL \leq 100mg/dl (%)	53.1		61.3%
Bijlholt et al. 2018		NR		
Choukem et al. 2014	Total Cholesterol (mg/dL)	Cameroonians 202 African immigrants 185		194
	HDL Cholesterol	Cameroonians 40 African immigrants 50		50
	LDL Cholesterol	Cameroonians 130 African immigrants 119		116

Abubakari et al. 2013	NR			
Snijder et al. 2017	NR			
Verma et al. 2010	Total (%)			
	1997	11.6	20.1	13.3
	2006	80.0	77.2	82.0
	≤ 5.0 mmol/l (%)			
	1997	38.9	43.2	31.3
	2006	71.9	79.2	72.6

Table 2-7 Cholesterol outcome measures

LDL -Low-Density Lipoprotein

HDL - High-Density Lipoprotein

NR - Not Reported

2.5.2.5 **Body Mass Index (BMI)**

Body Mass Index (BMI) was reported in five studies in this review (Bijlholt et al. 2018; Snijder et al. 2017; Choukem et al. 2014; Abubakari et al. 2013; James et al. 2012). Three out of the five studies reported lower mean BMI among Blacks than White population (Bijlholt et al. 2018; Choukem et al. 2014; Abubakari et al. 2013; James et al. 2012). Bijlholt et al. (2018) reported lowest BMI among participants in Rural Ghana and Urban Ghana (23.9kg/m² and 27.1kg/m²) compared to immigrants in European sites (29.2-30.8kg/m²). Among immigrants in European sites, BMI was similar in Amsterdam (29.7kg/m²) and Berlin (29.2kg/m²) while the highest BMI was reported in London (30kg/m²). Choukem et al. (2014) reported similar BMI values among Cameroonians and Cameroon immigrants (27.9 and 27.4kg/m²) with the highest BMI reported among Caucasians (30kg/m²). Similarly, James et al. (2012) reported lower BMI among immigrants than the White population. Lowest mean BMI was reported among South Asians (27.8kg/m²), followed by Black groups (30.8kg/m²) while highest BMI was reported among Whites 33.3kg/m². Abubakari et al. (2013) reported lowest BMI among Black group (31.35 kg/m²) while Whites had highest (33.44 kg/m²). However, Snidjer et al. (2017) reported the lowest mean BMI among Dutch participants (25.2kg/m²), highest mean BMI was reported among Turkish participants (27.9kg/m²). Ghanaian immigrants were reported to have mean BMI of 26.3kg/m². Similarly, among female participants, lowest mean BMI was reported among Dutch participants (24.4kg/m²) while highest mean BMI was reported among Ghanaian immigrant participants (see Table 2.8).

Authors	Body Mass Index Measure	Black-Africans	South Asians	Whites
Ballotari et al. 2015		NR		
James et al. 2012	Mean BMI	30.8	27.8	33.3
Dreyer et al. 2009		NR		
Fosse-Edorh et al. 2014		NR		
Wieland et al. 2012		NR		
Bijlholt et al. 2018	Mean BMI (kg/m ²)	Amsterdam 29.7 Berlin 29.2 London 30.8 Urban Ghana 27.1 Rural Ghana 23.9		
Choukem et al. 2014	Mean BMI	Cameroonian 27.9 African immigrant 27.4		30
	BMI ≥ 25 kg/m ² (%)	Cameroonian 74.0 African		81.4

	BMI \geq 30 kg/m ² (%)	immigrant 68.4 Cameroonian 32.0 African immigrant 24.5		44.2
Abubakari et al. 2013	Mean BMI	31.35	31.43	33.44
Snijder et al. 2017	Mean BMI	Male: 26.7 Female: 29.6	Male: 25.8 Female: 26.7	Male: 25.2 Female: 24.4
Verma et al. 2010	NR			

Table 2-8 Body Mass Index outcome measures

BMI - Body Mass Index

NR - Not Reported

2.5.3 Qualitative Articles Synthesis

A qualitative synthesis involves seeking more complex and contested theories included in a review. Synthesising qualitative studies has been a point of argument among researchers. Some authors believe that qualitative findings are specific to the context in which the study was conducted and therefore bringing these findings together take away the specificity of the studies. Bringing together such studies opens reviewers to possible de-conceptualising of the studies' findings and wrong assumptions might be concluded (Sandelowski et al. 2007: Campbell et al. 2003). However, other authors argue that qualitative studies need to be synthesized as this helps to avoid recycling research. Silverman (1998) also argued that there is a risk of isolation by qualitative researchers from policy makers if they cannot access the meaning of qualitative findings on policy and practice. Furthermore, there is a need for reconciliation of qualitative research findings, as Thomas and Harden (2008) argued, policymakers are interested in answers only qualitative findings can provide but are not able to sort through data that may result if they tried to search, read and interpret research themselves. Therefore, it is important to review and syntheses qualitative findings.

In addition to qualitative synthesis use by policymakers, qualitative synthesis allows further interpretation of qualitative studies that cannot be gotten from analysing one study in isolation. Walsh and Downe (2005) explained that qualitative synthesis is not the reduction of research findings as is done in quantitative meta-analysis. In line with the above argument of qualitative synthesis, findings of retrieved qualitative studies were synthesised it was decided to carry out synthesis of the articles retrieved for this review. These studies were brought together because they focus on African immigrants and this was a basis for bringing their findings together as context, history of participants influence research findings.

2.5.3.1 *Main Themes Extracted from Studies*

Five qualitative articles were included in this review (Wallin et al. 2007: Kohinor et al. 2011: Brämberg et al. 2012: Kahn et al. 2013: Kindarara et al. 2017). These articles focus on explaining some factors that may contribute to the management of T2DM

among the immigrant population. Some of these factors help to explain the findings of T2DM management from the quantitative articles reviewed.

Delayed Diagnosis

Studies review reported how T2DM diagnosis is delayed among participants. People were reported to have only found out about their T2DM status when in the hospital for other health issues. Kahn et al. (2013) reported participants finding out about having T2DM when in emergency units for other health conditions. This was reported to contribute to the management of patients' T2DM, mainly as the late diagnosis can impact on T2DM complications. Many of the participants were diagnosed with T2DM only after noticing symptoms that made them go to the hospital.

Emotions at being diagnosed

Emotions at being diagnosed with T2DM were reported to be influential in T2DM management (Kahn et al. 2013; Kindarara et al. 2017). Participants were reported to be surprised about the diagnosis, as it was not expected. This relates to how participants go on to manage their T2DM. Emotions such as denial, anger, acceptance and depression are some emotions participants reported to experience after their diagnosis. These emotions have different ways of contributing to the management of T2DM. Denial, anger and depression can be barriers to proper management of their T2DM as recommended by health care professionals.

Knowledge of Type 2 Diabetes Mellitus Cause

Many of the participants in the study review were reported to have limited knowledge about T2DM as a disease condition (Kahn et al. 2013; Kindarara et al. 2017). Kindarara et al. (2017) reported how participants explain not knowing much about T2DM before they were diagnosed with the condition. This was reported to contribute to their management of the condition. Reports of learning everything about the condition due to their diagnosis, which makes it difficult for them to follow through with management recommendations. Having adequate knowledge about the condition was reported to help in adequately managing the condition.

Barriers to Management

Studies reported some factors as barriers to the optimal management of T2DM. Dietary struggle was a factor that was reported by participants as a barrier to their management of T2DM. The unfamiliarity of participants with T2DM recommended diets by medical professionals was reported as a barrier (Kohinor et al. 2011: Kindarara et al. 2017). The processes of cooking and cultural influence in diet were also reported as barriers to management (Kohinor et al. 2011: Kahn et al. 2013: Kindarara et al. 2017).

Most participants were reported to work long hours as a result of higher cost of living in these countries, which they reported to limit the management of their condition (Kahn et al. 2013). Religious requirements were reported to contribute to barriers of managing T2DM because of religious commitments such as fasting due to their beliefs. Brämberg et al. (2012) reported the lack of individualised care by healthcare professionals as a barrier to T2DM management. The observational study of T2DM appointment between DM nurse and patients reported how patients' concerns on T2DM management were not properly addressed due to the lack of individualised care for these patients.

Facilitators to Management

Studies also reported some factors enhance better management of their T2DM (Wallin et al. 2007: Kindarara et al. 2017). This was reported by participants to help in managing their T2DM. Social support and having a common routine or everyday practice to follow in managing T2DM was reported as enhancing their T2DM management (Wallin et al. 2007: Kindarara et al. 2017). Having a culturally tailored recommended dietary plan was also reported to facilitate T2DM management among participants (Kohinor et al. 2011). Beyond the presentation of the findings from the review, there was a need to discuss the meaning of these findings and how highlighted issues can be addressed in practice and in research.

2.6 Discussion

This review was carried out to explore the management outcome differences among ethnic minority groups and the general population. Poorer T2DM management

outcome among Blacks, South Asians than the White population was found in this review. Although T2DM prevalence was higher among South Asian group, Black group had higher prevalence than the White population in all studies reviewed. In addition, T2DM management outcomes like HbA1c, blood pressure and cholesterol level were slightly higher among Black groups. Average blood glucose, which was measured with HbA1c outcome, was slightly higher among Black and South Asia participants while the White population had a lower measure than both groups. In relation to the HbA1c control, different control targets were used by the studies. All studies that relate HbA1c target measures between Whites, Blacks and South Asians group, reported a higher percentage of Whites meeting the target than Blacks and South Asians. In addition, cholesterol target is slightly higher among Blacks than other ethnic groups. South Asians were reported to have the lowest cholesterol measure in studies reviewed. There is the need to enlighten ethnic groups on the importance of lowering cholesterol level.

Black participants in all studies were less likely to meet blood pressure targets than Whites and South Asians except for one study where immigrants had lower blood pressure than Caucasians (Choukem et al. 2014).

It is worth noting that these studies use different targets for all outcomes measured which might influence their findings. Studies conducted in the UK used stricter target measures of 130/80mmHg than studies carried out in the USA (140/90mmHg). It is important to note that recently, blood pressure classification for hypertension in the USA has been moved from 140/90mmHg to 130/80mmHg which will make more than 46% of Americans hypertensive (de Boer et al. 2018). New studies after this review may use stricter targets than studies in this review, which may affect their findings.

In general, Black groups were reported to be least likely to meet all three-outcome targets, although they had lower BMI in three of the four studies that reported BMI measures. Less likely to meet all three outcomes has been reported to increase the risk of developing T2DM complications (Holman et al. 2008). This review shows T2DM management disparity among ethnic minority groups and Whites; this is particularly pronounced among Black groups. Similar findings have been reported in reviews (Agyemang et al. 2002; Agyemang et al. 2003). Agyemang et al. (2012) showed that blood pressure increases among the Black-Caribbean population with increasing age exceeded other ethnic groups like White group. Only two studies

reported separate T2DM management among Black-Africans and Black-Caribbean from the studies conducted in the UK (Ballotari et al. 2015; Abubakari et al. 2013). This study found that there were significant differences in management outcome between both groups. This highlights the need to study these groups separately rather than combining them as one homogeneous group.

There is a recommendation to explore cardiovascular disease risk factors and health behaviours by country of emigration (Sewali et al. 2015). This is of importance as it was not possible to know the percentage of Black-Africans and Black-Caribbean that make up "Blacks" as reported in some studies. This makes interpreting the findings from these studies to each group difficult.

In terms of the Black population, it is known that Black-Caribbean has longer years of integration into the UK society due to earlier migration than Black-Africans. However, Black-Africans are immigrants that are more recent, 95% came after 1981 to the UK (ONS 2015). In addition, Black-Africans are among the fastest growing ethnic groups in the UK making up more than 17% (1.3 million) of foreign-born (Sunak et al. 2014). This should, be reflected in studies that are concerned in recruiting "Blacks".

The variation in study methodologies, measurement methods, outcome target levels and the combination of Black groups in studies should be taken into consideration when interpreting the findings of this review. Standardizing the target for T2DM management outcome will be valuable to future research. In addition, there is a need for meta-analysis between Black-Caribbean and Black-African due to the differences between these groups.

Another interesting finding is the differences in immigrant management on different European sites as reported in the review. London site reported significantly lower management outcomes than other European sites although a higher education percentage was reported among African immigrants from this site. This shows that there is poorer management outcome among immigrants, which vary with country of residence. It will be valuable to investigate environmental influence on T2DM management among African immigrants.

Looking into T2DM management, some explanation for poorer management among African immigrants was reported among the qualitative studies reviewed. These include the late diagnosis of T2DM among this population, meeting religious requirements, dietary struggles, lack of individualised care. These factors are

important in contributing to adequate management of T2DM as they relate to lifestyle factors in the management of T2DM (Tenkorang 2017). Lifestyle factors greatly influence the successful management of T2DM (Dave et al. 2019; McFarlane et al. 2018; Diabetes Prevention Program Research 2002). This is particularly important, as T2DM, management is importantly a self-management condition (Powers et al. 2015).

An explanation for the poorer management among Black groups might be due to lower awareness among this population. Lower awareness has been reported among this group concerning T2DM (Gele et al. 2015). Many of whom do not regularly check their blood glucose level and limited knowledge about T2DM as a condition was reported in the qualitative studies reviewed. Following the findings from the qualitative studies, there is a need to understand the needs of African immigrants in terms of managing T2DM in Western countries.

Maslow's hierarchy of needs can be useful in exploring the needs of these individuals. How do they view their needs in relation to managing T2DM? What are the goals that they set to achieve based on the needs identified? How have their lived experiences prior to migration contributed to their current management of T2DM after migration? These important aspects of T2DM management require exploration.

In addition, the use of social cognitive theory might be valuable in understanding the goal setting of these individuals. The social cognitive theory explains that human behaviour is extensively motivated and is an ongoing exercise of self-influence. This highlights that the motivation of these individuals in terms of meeting T2DM management requirements is dependent on their motivation and goal setting perception. Goal setting is defined as the object or aim of an action, which an individual is consciously trying to achieve (Lunenburg 2011; Locke and Latham 1994). It is mainly a mental representation of desired outcome and setting a goal is the process of adapting strategies to achieving such goals (Mann et al. 2013; Maes and Karoly 2005). The process of goal setting among adults is recognised to have four components, these include: recognising a need for change, establishing a goal for the change, monitoring progress towards achieving the goal and rewards for goal attainment (Cullen et al. 2001). All aspects of goal setting are influenced by the perception of individuals on the need for such goal. It then means that people will be motivated to meet T2DM management requirements based on their perceptions of

such requirement. The poorer management of T2DM as reported in this review can be explored among African immigrants to understand their perception concerning healthcare recommendations. Following the issues highlighted in this review, there is a need to explore policies in the UK for management of T2DM among ethnic minorities. This is particularly needed due to the inequality noted in managing T2DM among ethnic groups and White population.

2.6.1 Strength and Limitation

There are strengths and limitations to the search strategy described above. A limitation to this is the limited period allocated to this session of the thesis. It cannot be 100% guaranteed that all relevant articles were retrieved. However, all efforts were made to cover all relevant article sources. In addition, a literature review is a continuous process throughout the research lifecycle (Pautasso 2013). Another limitation is that due to the nature of this search which was conducted by a lone researcher. The resources of having more than a single researcher to conduct the review were not available this would have saved time on the review. There are strengths attached to this review, for one, all primary research articles were retrieved and thoroughly read. In addition, published and unpublished sources were searched to include any relevant articles. An additional strength is that this research question has not been answered by review until this study.

2.7 Conclusion

This review was conducted to compare T2DM management outcome among Blacks, Whites and South Asians as the common ethnic groups in Western countries. Ten quantitative studies and five qualitative studies were included in this review. While it is appreciated that this is a small data set for review, some articles were removed due to the issues noted in the literature concerning the limited studies conducted among African immigrants. The findings of this review showed poorer T2DM management which indicate a need for further research specifically among African immigrants. Exploration of T2DM management among this population can give insight into challenges specifically faced by African immigrants in Western countries.

2.8 Recommendation

In following with the findings from the review, there are several recommendations that can be suggested for future research and practice.

- There is a need for a more universal target measurement for T2DM outcomes; this is because the studies reviewed had different target outcome measurements which makes it a challenge to compare results for different studies.
- In the categorisation of groups based on race and ethnicity, it is recommended that studies use a more specific method of categorisation as the use of race is too general for some heterogeneous groups as reported in this review. One example is the categorisation of Black groups in some studies. Due to the heterogeneity of Black-groups consisting of African immigrants, Black-Caribbean and African Americans, using race categorisation can be too general in research. It is recommended that a relatively homogeneous categorisation is needed to focus the value of each study in research field and practice.
- There is a need for studies to be carried out among African immigrants that are less represented in studies due to the generalisation of Black population in research. There are more specific T2DM burdens that need to be explored for better support for this group.
- As reported in this review, T2DM management is poorer among Black-Africans than other ethnic groups in Western countries. The findings that this group are less likely to meet all the T2DM management outcomes show the need to reduce the health disparity within this population. Improving T2DM management outcomes is important in reducing the possibility of developing complications due to living with T2DM. Therefore, studies that specifically focus on providing a better understanding of T2DM management among this population are needed to assist in improving their management outcomes.
- There is a need for research that focuses on African immigrants that are less represented in studies. In addition, there is a need for a qualitative study that utilizes in-depth exploration of the T2DM management process to give a clearer view of how T2DM is being managed among this group. This will

contribute immensely to the T2DM management support that can be tailored and provided for individuals in this group.

- Health care practitioners need to pay special attention to the T2DM management outcome measures of the African population in practice; there may be a synergistic effect of unmet T2DM management outcomes, which can affect the public health success towards implementing T2DM management plan for all populations in Western countries.

2.9 Implication for Future Research

As explained earlier in the review finding section, there are differences in the knowledge, dietary habit, cultural belief and perception of Africans, which affects T2DM management. However, a more challenging issue is the poorer management outcome as reported in this review. There is an urgent need for research on the management process of ethnic minority groups, particularly African immigrant populations that are less likely to meet all T2DM management outcomes than other minority groups (Alloh et al. 2019a). This will assist in understanding the epidemiological bases for public health and health promotional services among this ethnic group of immigrants. Specifically, research that can provide theoretical explanation for T2DM management of African immigrants will be an immense contribution to the planning of an optimal management regime for this population. In addition, lifestyle factors in respect to the lived experiences of African immigrants before migration need to be further explored to give an understanding of how life before migration can affect the health behaviour of African immigrants. This will be valuable in understanding their current T2DM management as it is influenced by their lived experiences before migration. Such evidence will contribute to assisting health practitioners in formulating interventions that will consider past experiences that shape the present lifestyle behaviour and practices of this population group. In general, the need to improve T2DM management among African immigrants requires further research in this regard (Alloh 2018a).

2.10 Research Gap Identified from Review

Following the discussion on the need for further research, knowledge gaps were identified in this section. Therefore, this study was designed to address these knowledge gaps as found from the review. There is a need to explore the management process of living with T2DM among this population. It was also identified that African immigrants in studies have been categorised with the Black-Caribbean. This classification of African descents based on race in health research requires re-evaluation. As one of the fastest growing population, exploring the management process and experiences will contribute to the knowledge of how lifestyle factors contribute living with T2DM among Black-African immigrants. To achieve specificity concerning the heterogeneity of Africans as a population (see Section 2.4.1), this study focused on African immigrants, specifically from West Africa, as there is a knowledge gap among this population on the lifestyle contribution of managing T2DM. A qualitative approach was used to explore the management of T2DM among this population as the method allows in-depth exploration of the issues identified in Section 3.6. The research question for this study is then generated based on the knowledge gaps found from this review.

2.11 Generating Research Question

Following the report of high prevalence and poor management of T2DM among black and ethnic populations in the literature, there is a need to explore the T2DM management among ethnic groups (Etchi et al. 2019; Commodore-Mensah et al. 2018; Meek et al. 2015). However, it was noted that no study has yet explored T2DM management, especially with the aim of generating a theoretical explanation for the management process among African immigrants that are living in the UK. Based on the critical review of the literature it was concluded that research carried out on exploring the T2DM management outcomes among ethnic groups have been limited based on these findings:

- Type 2 diabetes mellitus prevalence was higher among South Asians and Black-African immigrants than White population.

- There is a need to classify participants with sociocultural factors sensitive to classification. In doing this, ethnicity is a better classification than race as noted from some studies.
- Except in one study, Black-Africans are less likely to have a higher BMI than Whites in other studies that reported BMI. This shows that BMI cannot be reliably used to indicate the optimal management of T2DM.
- Black groups are less likely to meet that target for T2DM management measures than other ethnic groups in Western countries.

2.12 Research Question

Following the research gap identified from the review findings as described above, the research question was generated to address the gap. Therefore, this study seeks to understand and contribute to knowledge in the management of T2DM among WAIs living in the UK. This was achieved by thoroughly exploring and examining the research question using the appropriate method to uniquely address the poor management problem identified in the literature among this population.

The question that requires exploration to meet the aim of this study is as follows.

- What are the experiences of West African immigrants in managing type 2 diabetes mellitus in the United Kingdom?

This research question is exploratory and designed to allow for the further exploration of the knowledge gaps identified above. Answering this question can contribute to knowledge which can be valuable for academics and practitioners working with African immigrants in the UK to manage T2DM.

2.13 Chapter Summary

This chapter presented the search strategy that was conducted in the retrieval of the articles reviewed. The systematic review compared T2DM management outcomes among Whites, South Asians and Black-African groups. Ten quantitative studies and five qualitative studies were reviewed. The poorer management of T2DM outcomes among African immigrants highlights a gap in the literature. The gap noted is related to the need for a better exploration of T2DM management among African immigrants. It was argued that there is need for study to be focused on African

immigrants as there is cultural and lifestyle diversity noted among the Black race. Therefore, this research is carried out to add to knowledge in the gap noted and discussed in the T2DM management outcomes of this population. The next chapter (Chapter 3) will focus on addressing the research gaps that have been identified in this chapter. This will include presenting the research design for this study and the methodology selection used to carry out this study.

Chapter 3 **Methodology**

3.1 Introduction

Chapter 2 discussed in detail the process of conducting a systematic review of the literature on the management outcomes of living with T2DM among ethnic groups in Western countries. Paucity of the literature in the area was noted, as there were limited numbers of relevant articles retrieved for the review. In addition, the review found issues of under-representation of Black African immigrants in studies. This may be due to recruitment of Black-Caribbean and African Americans in many studies overshadowing the limited representation of Africans in research. It was noted that Black-Africans were less likely to meet all three clinical T2DM outcome measures than Whites and south Asians in studies reviewed. In addition, the qualitative synthesis of the literature highlighted some of the factors that contribute to the poorer management of T2DM among Black-Africans than the general population. These identified issues and the need to fill identified gap in the literature influenced the research design for this study.

In effect, the aims and objectives of this study have been formulated to fill the knowledge gaps as noted from the review of the literature. A qualitative methodology was adopted to explore the experiences of WAIs in managing T2DM in the UK. This assumed that health experiences in managing chronic conditions are subject to individual's experiences and the meanings attached to the process (Bloem and Stalpers 2012). It was based on this assumption that T2DM management was recognised to be a social process for WAIs living in the UK.

In this chapter, the rationale for adopting a qualitative methodology approach is presented with a focus on the selection of CGT as the philosophical and methodological framework for this study. This decision was mainly based on the methodological limitations that were noted during the review of the literature (see Section 3.2). My constructivist stance as a researcher was discussed and how this affects the design of this study.

3.2 Highlight of Methodological Limitations in Literature

In considering existing knowledge in T2DM management among immigrants, it was noted that there is a gap in subjective paradigm. In the literature reviewed, most studies adopted positivist underpinnings. This paradigm is philosophically and epistemologically underpinned by assumptions offering objective claims to knowledge and so can be measured using quantitative methods (Yilmaz 2013: Houghton 2011).

This was evidenced in the review of the literature that was carried out prior to designing this study (see Chapter 2) which highlights that most of the studies relevant to this topic were quantitative studies. The studies used questionnaires to measure the management outcome of T2DM among ethnic groups (Bijlholt et al. 2018: Snijder et al. 2017: Ballortari et al. 2015: Choukem et al. 2014: Fosse-Edorh et al. 2014: Abubakari et al. 2013: Verma et al. 2012: Dreyer et al. 2010: James et al. 2009). Such quantitative studies are designed to test the relationships between variables, unlike a qualitative study that is designed to describe and understand social processes (Sale et al. 2002). Although some studies use a qualitative approach among the studies reviewed, there was no in-depth exploration of T2DM management noted. It might be proposed that this has led to research gaps because only a few studies have explored the subjective views of participants in the management of T2DM. The outcome of methodological limitation within T2DM management research among WAIs requires studies that can address this gap by exploring individuals' personal experiences of T2DM management in the UK. Following my argument on knowledge gap due to the quantitative methodology used in the literature, this study seeks to add to this limited knowledge base using qualitative methodology.

3.2.1 Aim

The aim of this study is to understand the experiences of West African immigrants in managing Type 2 diabetes mellitus in the United Kingdom.

The objectives to achieve the stated aim of this research which, sought to answer the research question (see Section 2.12), are as follows:

- To explore Type 2 diabetes mellitus management processes among West African immigrants living in the United Kingdom.

- To explore the factors contributing to the management of Type 2 diabetes mellitus in the United Kingdom among West African immigrants.
- To understand the contribution of a change in environment on the management of Type 2 diabetes mellitus among this population.
- To explore how the identified factors may influence each other and the management of Type 2 diabetes mellitus among West African immigrants.
- To develop a theoretical explanation for the management of Type 2 mellitus among West African immigrants living in the United Kingdom.

Following the aim and objectives of this study, there is a need to understand the philosophical and methodological context of the research design that governs this study.

3.3 Philosophical and Methodological Context

Creswell (2013) argued that every piece of research is influenced by our beliefs and philosophical assumptions that are in turn based on our views on the type of topic/ problem we study, the research questions we ask and the method we choose to gather data. Therefore, philosophical understanding is very important in studies especially in qualitative research because of the impact on study design.

Philosophically, research approaches are divided into quantitative, qualitative and mixed-method approaches (Creswell 2013: Beissel-Durrant 2004).

Qualitative research takes these beliefs and assumptions into consideration by stating the researcher's underpinning philosophical assumptions and beliefs. The theory(s) adopted to guide the research by researchers are invariably directed by the philosophical assumptions and beliefs of researchers. Mkansi and Acheampong (2012) explained philosophy as the use of abstract ideas and beliefs that are used to inform the processes undertaken in the research. It is important to understand the philosophical contribution to research. Denzin and Lincoln (2011) explained that the philosophical and theoretical framework lays the foundation for the more specific methodology approaches in research design. Huff et al. (2009) described philosophical assumptions to be important in defining the type of research a researcher conducts, questions asked and assisting in explaining research outcome. It can be suggested that philosophical assumptions have been integrated into several scholarly communities (Creswell 2013: Mkansi and Acheampong 2012). This

suggests that the type of questions asked and problems that are investigated in certain specialist fields can be as a result of the philosophical assumptions. We may assume that researchers will continue to follow the integrated philosophical assumptions in their field until they step into another scholarly world. However, Creswell (2013) also noted that these assumptions could change over time in a field as research evolves. Indeed, philosophical assumptions assist reviewers of research to know the stand of the research and the assumptions made thus contributing to the fair evaluation of a study.

Given the importance of researchers stating their philosophical assumptions, it was worth considering the four types of philosophical assumptions (Creswell 2013: Mkansi and Acheampong 2012). These consist of ontology, epistemology, axiology and methodology. Grix (2002) explained that ontology relates to the claims and assumptions made about the nature of social reality. It sees reality as multiple and researchers embrace the different realities of a phenomenon. This is covered by recruiting different participants to explore the different realities as presented by the participants in studies. Epistemology concerns claims about what is assumed to exist (Ontology) or what can be known. The epistemological assumptions underpinning research means the researcher tries to get as close to participants as much as possible to gain knowledge. This is because knowledge is subjective as presented by participants and therefore it is important to explore the knowledge in the natural environment of participants in the field. The context in which research is conducted is important as it informs the knowledge that researchers gain. Axiological assumptions raise the importance of researchers placing themselves in the study by explaining the value they bring to the study (Grix 2002). The last assumption is the methodological assumptions that are characterised by inductive and emerging findings and shaped by methods and researchers' experiences in data collection in the field. Vasilachis (2009) argued that a researchers' methodological approach should be underpinned and reflect the ontological and epistemological position of the researcher on the study. This is the approach was adopted in carrying out this study. Figure 3.1 shows the philosophical assumptions followed in carrying out this study. Also, the figure highlights how the assumptions direct the methodology and methods use in data collection and analysis of this study.

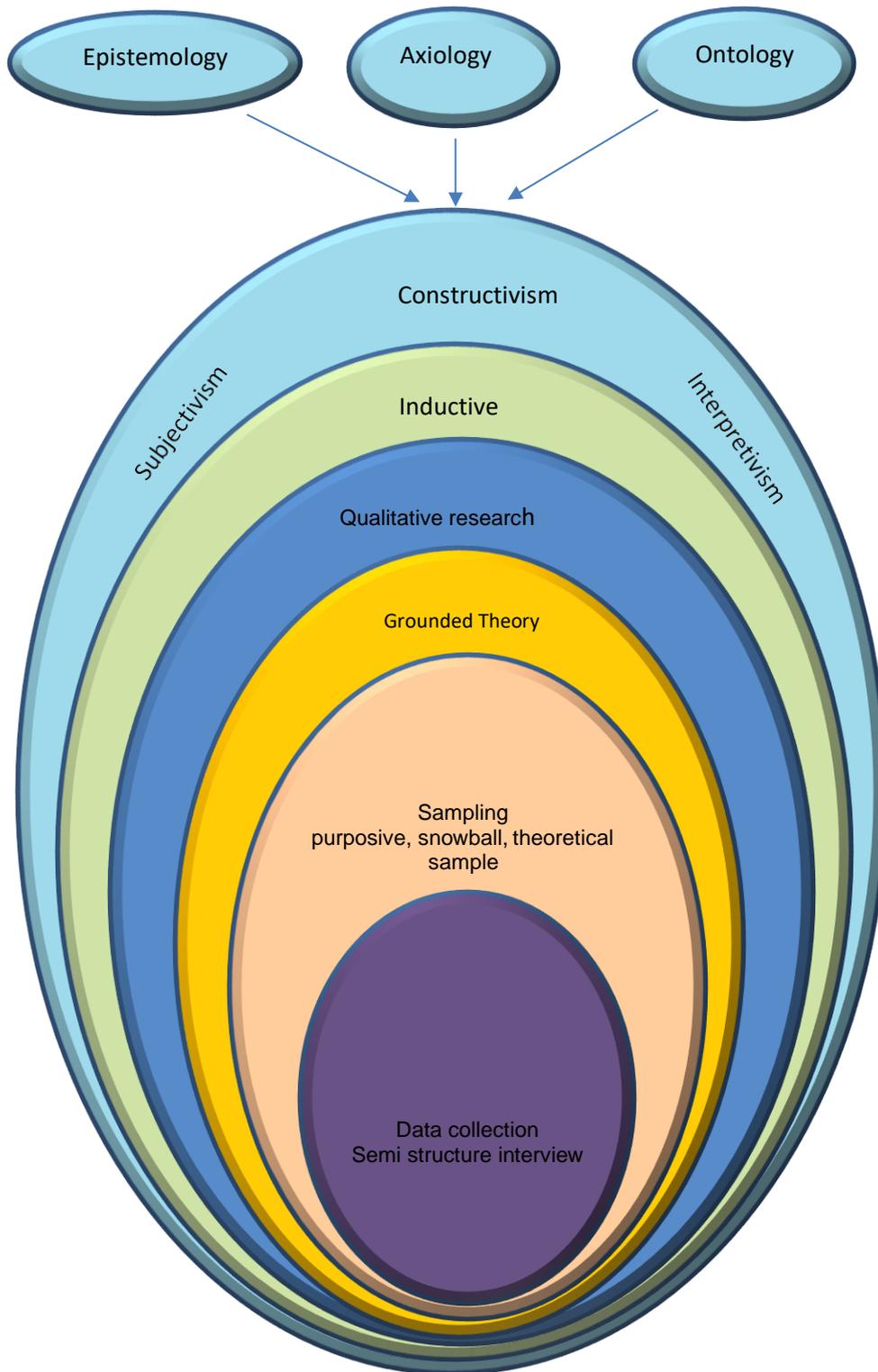


Figure 3-1 Impact of Philosophical assumption of Grounded Theory Approach
 Research onions: Adapted from Saunders et al. (2019)

3.4 Consideration of Qualitative or Quantitative Methodology

According to positivist critics of qualitative research, studies that use a qualitative approach, in general, lack rigour and credibility (Tuli 2010). Quantitative research methodologies, unlike qualitative research, make use of numbers and statistics to test a hypothesis and verify theories. Quantitative research methodology is known as an approach that applies a positivist assumption to social phenomena (Keele 2010: Tuli 2010: Stark and Trinidad 2007). The methodology works with operational definitions, objectivity, replicability, causality (Yilmaz 2013). Research of this genre is epistemologically underpinned by a distinctive theory of what is accepted as knowledge. This research methodology was previously seen as the gold standard for conducting research (Bondemark and Ruf 2015: Hammersley 2015: Sullivan 2011). However, this thinking has changed as research approaches evolve, acknowledging the importance of qualitative research.

Qualitative methodology, on the other hand, differs in several ways from the quantitative methodology described above. Qualitative methodology sees and understands the world from the actors involved or who have experienced or are experiencing the phenomena under study (Holliday 2010: Stark and Trinidad 2007). However, as interpretivist, qualitative researchers believe the world is a construct. Therefore, there are no absolute facts which dominate the human experience of the world. Researchers use words to explore the world and its meanings from the participants' perspective.

Differences between quantitative and qualitative methodologies have been described by earlier qualitative authors as they try to distinguish their approach from the popular quantitative methodology (Keele 2010). The qualitative methodology is much more fluid and flexible than quantitative research. This contrasts sharply with quantitative research that places emphases on fixed measurements, hypothesis and theory testing. This has been a point of argument for quantitative researchers as they claim qualitative research is not credible and reliability cannot be guaranteed (Holliday 2010). Qualitative methodologies see the world as a construct that is typically attributed to a phenomenon. It views phenomena as unique to each individual and tries to get meanings and interpretations from participants. The qualitative methodology brings researchers close to participants in the study. It has to be appreciated that although researchers come close to participants in studies,

they do not necessarily replicate participant's accounts of phenomena (Charmaz 2014). They observe, question and analyse participant's account of phenomena, which are then interpreted by the researcher. Qualitative research has gained popularity in the research community and is now used on its own as a research methodology in studies and textbooks unlike when previously used as a part of quantitative studies (Holliday 2010).

Arguments about qualitative and quantitative methodologies have moved from an earlier choice on which of the two methodologies is better than the other to which is more appropriate for the study (Holden and Lynch 2004; Jarvinen 2000). The philosophical assumptions of qualitative and quantitative research approaches that were the basis for the adoption of the research approach used in conducting this study is presented (see Table 3.1).

Assumptions	Quantitative	Qualitative
Model	Natural Sciences	Social Sciences
Oncological Position	Realist/Objectivist	Subjectivist/Constructivist
Epistemological Position	Positivism	Interpretivism
Methodology	Experimental/observation	Grounded theory, phenomenology, Ethnography.
Theoretical position	Deductive	Inductive
Purpose	Generalisation	Contextual
Knowledge	Fact	Social construction
Method	Experiment, Randomised Control Trial (RCT), longitudinal, cross-sectional study	Semi/Unstructured interview, focus group discussion, observation
Tools	Questionnaire, structured interview guide	Semi-structured /unstructured interview guide

Table 3-1 Comparison of Philosophical Assumptions of Quantitative and Qualitative Approach

Adapted and Modified from Creswell (2013)

3.5 Philosophical Underpinning of this Study

There are various factors that influence T2DM management and the meaning attached to these factors. This is because individuals are different and unique in their understanding and perception of these factors contributes to their management of T2DM. Factors such as religion, culture, diet, physical activity, mental distress amongst others influence the lifestyle of individuals differently (Alloh et al. 2018b; Blazer and Hernandez 2006). It is, therefore, important to explore these concepts in the context of the participants. It is of importance that the method used should provide a wider understanding of the lifestyle factors of WAIs in the management of T2DM with a focus on its context rather than narrowly on T2DM management on its own. This is mainly as T2DM management is seen as a social process that involves social interactions.

Lifestyle contribution to the management of T2DM and its context are very complex to study. Conducting a study in the field is rather different from carrying out studies in the laboratory. In the field, there are interactions between researcher and participants and the researcher cannot separate from the participants (Greenhalgh et al. 2005). Research is also a construct that is influenced by what is known before the study, and researchers' experiences and background (Charmaz 2014). Therefore, it is important to state the philosophical assumptions of the researcher in this study. After consultation of literature around the topic of this study and my vision, which is also shaped by training and experiences, a qualitative research approach was found to be suitable for this study. Therefore, the qualitative philosophical assumptions were adopted as the study questions determine the methodology adopted.

3.6 Qualitative Research Methods

Methodological flexibility and structure have been an issue in qualitative research, as the methodology has grown over the years (Holloway and Todres 2003). It is well established that research design, chosen methods and tools should be based on the chosen research paradigm (Mkansi and Acheampong 2012). In addition, the methodology guides the data analysis process and interpretation of findings. It is, therefore, important that a suitable methodology be identified for the research question, not the other way around. This highlights the epidemiological importance placed on research methodology. Sandelowski (2000) argued confusion ensues

when researchers claim to adopt a methodology, but they may only have minimal elements of the claimed approach in their research. This has resulted in arguments that researchers need to follow the adopted methodology from assumptions, theory, research design, methods and tools used for data analysis and interpretation. Sandelowski (2000) highlighted examples of studies that claim to adopt narrative methodology while only using open-ended interview but reporting the subjective experiences of participants. This confusion has resulted in posturing about phenomenology, grounded theory, ethnography or narrative study rather than explaining that the study adopted phenomenology, ethnography or narrative interpretations. To avoid such incomplete use of the adopted methodology, a thorough explanation for each methodology is described and a critique of each method along with the rationale for selecting the adopted method given.

Three fundamental methodologies of qualitative approaches are considered the foundation; these are phenomenology, grounded theory and ethnography. They are argued to be the foundation for all other types of qualitative methodologies (Creswell 2013; Starks and Trinidad 2007). Polit and Beck (2010) provide the summary of main qualitative research approaches which have roots in the following disciplines like: philosophy (phenomenology), anthropology (ethnography and ethnoscience), sociology (grounded theory and ethnomethodology), sociolinguistics (discourse analysis), history (history research) and psychology (ethnology and ecologic psychology). Looking into each of the three approaches in-depth, this is to provide rationale for the approach adopted in this study.

Phenomenology is a qualitative method that uses thick description to analyse the lived experience of participants to understand the meaning attached to their experience (Starks and Trinidad 2007). Phenomenology is the exploration of individual experiences of everyday phenomenon “*human experiences are examined through detailed description of the people being studied*” (Creswell 2013, p. 55).

There are two types of phenomenology approaches, the descriptive phenomenology developed by Edmund Husserl and interpretative (Hermeneutic) phenomenology by Martin Heidegger (Sloan and Bowe 2014). The descriptive phenomenological approach requires the researcher to bracket out their perspectives in the analysis of the research. The aim of “bracketing” is to exclude the perspectives of the researcher concerning the understanding of the phenomenon (Chan et al. 2013). On the other hand, interpretative phenomenology does not require bracketing and does

acknowledge the perspectives of the researcher (Smith and Osborn 2015). Although interpretative phenomenology is similar to this study in terms of its constructivist nature and the acknowledgement of the researchers' perspective, it was not found suitable to be adopted for this study. This is because the aim of the study includes the construction of a theoretical explanation of the area of study, an aspect that was not covered by the interpretative phenomenology approach (Creswell 2013).

Sakolowski (2000) argued that phenomenology states the obvious, telling what is already known without really giving any new information, although the method can be important and assist to illuminate areas that we may have overlooked.

Concerning this study, T2DM management requires social interaction, which the use of hermeneutic phenomenology may not have captured. The approach would probably not have been able to assist in theoretical development to explain the management process. This is needed to move beyond exploring the experiences of the people to the development of an inductive theory that can be a valuable contribution to knowledge.

Another approach is ethnography, which is a qualitative method that studies social interactions, behaviours and perceptions of groups, culture, communities and organisations (Gelling 2015; Holloway and Todres 2003). Ethnography provides rich, full coverage into the views of people and their practices/action in their natural location of habitat. This method uses observation, questions and listening to participants to uncover the area of interest, which is mainly to discover and understand what, is going on (Reeves et al. 2008). The approach sometimes presents the researcher as a stranger to the happening events in understanding the meaning of members of the culture of interest. The purpose of using ethnography is to gain the inside knowledge of events (Gerard 2010). Although interviews and use of field diaries are used in ethnography, observation of the events among members of the culture is the main method of data collection (Kawulich 2005). This involves observation of everyday living and practices over a period.

This method was not deemed the most suitable for this study. Ethnography focuses on understanding shared values of members of a community, which limits the individual ideas of the members of the community (Reeves et al. 2008). Although T2DM management is a social interaction process that involves community interaction, using ethnography for this study may exclude the individual experiences of managing T2DM. In addition, ethnography mainly uses observation as a method

for data collection, the use of which may be difficult in the exploration of T2DM management. First, participants' daily living may be influenced due to their knowledge of being observed. Second, because the extensive time required to observe T2DM management which can go over a long period of time will require resources that are not available for this study. Furthermore, cultural exploration of T2DM management may be interesting for research. However, this does not address the research gap as found in the literature (see Section 2.10). The use of the gap found in the literature to frame the research question for this study also means that using ethnography cannot completely answer the research question and meet the aim of the study. The consideration of GT for this study is explored in the next section.

GT examines a phenomenon to understand the patterns and the relationships among contributing elements (Strauss and Corbin 1998). This helps to develop the explanatory theory from the data gathered in the field. GT methods are systematic but flexible guidelines exist for data collection and analysis that leads to the development of theory generated from the data themselves. The methodology uses a comparative method of analysis, which involves going back and forth between inductive data collection and analysis (Charmaz 2014, p1). GT gives the researcher focus and flexibility while offering tools to conduct the research successfully. Data form the foundation for the development and generation of theory in GT (Glaser 1978). Grounded theorists develop theoretical analyses from the data collected from the beginning of the study. This is done by trying to understand what occurs in research settings, contexts, and participant's lives by explaining their statements, actions and undertaking interpretation to make analytical sense of the phenomenon of study (Mills et al. 2006). To decide on the most suitable qualitative methodology to be adopted for this study, descriptions of each qualitative methodology are presented (see Table 3.2).

Method	Description	Critique	Rationale
Ethnography	<p>Ethnography is a research methodology that provides inside knowledge into the culture and practices of people over time. In most cases, a researcher using ethnography engages with the people, culture while exploring their human experience (Hammersley and Atkinson 2007). Ethnography can involve the collection of both qualitative and quantitative data. Ethnography uses observation, interviewing and other forms of data collection at ethnographer's discretion. This research</p>	<p>A criticism of ethnography is that it is an unstructured approach to data collection by ethnographers. Data are collected as research sees the need and deciding what, where and when to collect the data. Hammersley (2006) argued that the term ethnography is a problem as it does not have a clear and systematic definition, which makes it mean a different meaning when used in different context. Furthermore, the addition of quantitative methodology makes it not a pure qualitative methodology (Brewer</p>	<p>The population of interest in this study are out of their home country as immigrants and so ethnography may not be suitable in this study. Furthermore, the aim of this study is not to understand the cultural relation of the population of interest in their cultural habitat. This is mainly as these individuals have moved away from their cultural habitat, making this approach unsuitable for this study.</p>

	<p>methodology allows the culture of a people to be described and understood.</p>	<p>2000). From the anthropology definition, ethnography requires the researcher to live in the community and perform the same practices as the community members. However, some social science ethnographers only undertake education research, which does not meet ethnography criteria (Troman et al. 2005).</p>	
<p>Narrative</p>	<p>Narrative analysis is a form of qualitative methodology in which participants are treated as active social components where personal and cultural realities are constructed through narrative and storytelling (Kim 2015: Clandinin and Connelly 2000).</p>	<p>Similar to ethnography, narrative analysis has different meanings and depends on the field in which it is used, making it difficult to measure the accuracy of the methodology. For example, the story analysed can be whole life or short briefs or long talks depending on the field of knowledge in which it is used (Greenhalgh et al. 2005: Holloway 2005). It is complex to establish a clear link between the</p>	<p>This methodology does not meet the aim of this study. This is mainly because the study aims to go beyond relating participants' stories to the need to develop a theoretical understanding for the management process of T2DM.</p>

		story told and sense of identity of the storyteller.	
Phenomenology	<p>Phenomenology methodology is concerned with the exploration of the lived experience of people and the attached to these experiences. There are mainly two types of this methodology (Holloway and Galvin 2016). Descriptive phenomenology, which gathers detailed concrete descriptions of specific experiences from people while seeking the most invariant meanings for the context. The other type is interpretative phenomenology that is focused on understanding the nature and meanings of experiences by examining the cultural context and the way language is used to give meaning and is interpreted (Patton</p>	<p>Phenomenology methodology was criticised that it is not possible to understand peoples' experiences without settling other questions about the natural world (Neo 2007). In addition, phenomenology seeks to understand and interpret how things seem to people while leaving open the things that are beyond peoples' consciousness. Brocki and Wearden (2006) argued that Interpretive phenomenology is not clear mainly due to the guidelines of how to conduct the methodology.</p>	<p>Phenomenology approach was not adopted for this study as phenomenology seeks to understand the lived experience of participants and the meaning ascribed to the phenomenon explored. The aim of this study goes beyond this as it includes the development of theoretical explanation for the management of T2DM among African immigrants.</p>

	2005).		
Case study	<p>Case study captures the complexness of a single case or similar cases. Case study investigates the complex functioning unit, which is in its natural context and contemporary (Baxter and Jack 2008). In effect, case study takes the holistic characteristics of a case and the meaning of the event (Stake 2005).</p>	<p>There are different ideas to what makes up case study depending on the field it is used (Johansson 2007). A case study can be combined with other methods. Critics argued that transferability is not possible due to the uniqueness of each case (Flyvbjerg 2006).</p>	<p>Case study will not be adopted to conduct this study, as there is no unique complex case identified yet. In addition, the aim of this study requires contributions of several participants so concentrating on few cases will not allow this aim to be achieved.</p>
Action Participatory Research	<p>Action participatory research is a qualitative methodology that is used to solve a problem. It is usually a community-based research that tries to solve a problem and improving practice. Action participatory research has been used within educational practice but has now spread to other fields of research. In action participatory research,</p>	<p>Action participatory research has been described as a methodology that has the potential to bridge the gap between research, theory and practice (Holloway and Galvin 2016). However, the methodology has been argued to lack generalisation, as it cannot always be generalised to other settings. Since</p>	<p>Action participatory research requires the solving of a problem in practice. However, the aim of this study is related to exploring the lived experiences of WAIs and developing a theoretical explanation for the management process. Action participatory research will not be</p>

	<p>the researcher and participants contribute to the development of the research. Therefore, participants are more involved in the research process as it evolves (Reason 2006: Brydon-Miller et al. 2003).</p>	<p>generalisation is what brings about change, this aspect of action participatory research is seen as a weakness (Wilson 2013: Checkland and Holwell 1998). Action participatory research has been criticised for possible lack of scientific rigour, as it seems to have confused social activism and community development with research (Kemmis et al 2013).</p>	<p>adopted to conduct this study.</p>
<p>Grounded Theory (GT)</p>	<p>Glaser and Strauss developed this qualitative methodology in 1967 (Holloway 2005). An important aspect of GT is towards the development of theory (Glaser 2004: Strauss and Corbin 1998). The theory is developed following data analysis which provides insight to the phenomenon under study (Holloway 2005).</p>	<p>GT is a creative process as it is used in areas where there is a lack of knowledge. Also used where existing theory offers limited or no solution to the research problem or modifying existing theory (Holloway and Galvin 2016). However, critics have pointed out some issues with conducting GT research. One issue is the emphasis that researchers should not</p>	<p>GT was adopted for this study as there is a theory to be developed. This is because there is limited research in this area. Also, theory development was found to be useful in understanding the process of T2DM management among African immigrants.</p>

	<p>have any preconceived ideas when collecting data (Thomas and James 2006). Another issue is the coding during analysis. As scholars argued this was not properly described on how to carry it out (Seale 2012). Also, when coding should be ended is not clearly stated. Finally, there is the critic of the sampling technique of GT (Holloway 2005).</p>	
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Table 3-2 Description of Qualitative Methodologies, Critique and Rationale

3.7 Selecting Grounded Theory Approach

Following the critique of qualitative methodologies as presented in Table 3.2, GT was found the most suitable to answer the research questions for this study. This is because there was a paucity of literature on this topic area. As explained in the review chapter of this study, limited studies have been conducted among African immigrants globally (see Chapter 2). Invariably there is limited understanding of the processes involved in the management of T2DM among African immigrants. This study is, designed to understand the processes involved in the management of T2DM among WAs in the UK. A theory was developed through the research process to identify the elements involved and their relationship.

Creswell (2018, p.35) presented a framework to show the connection between philosophy, research approaches, methods and research design. This framework shows how methodology guides the data collection and analysis process and interpretations of findings. It is, therefore, essential that methodology should be chosen in relation to its suitability to answer the research question, not the other way of trying to shape research questions to fit into a methodology.

3.7.1 Why Grounded Theory?

GT has been selected for this study as it was found to be the most suitable to answer the research question and aim for this study. GT seeks to develop explanatory theory from meanings and interactions with others in social processes about a phenomenon (Starks and Trinidad 2007; Gelling 2015). GT examines phenomenon to understand patterns and relationships among contributing elements (Strauss and Corbin 1998). GT is described as a methodology that focuses on the social interaction of the phenomenon (Chamberlain-Salaun et al. 2013). As explained earlier, T2DM management is a social process, making this methodology suitable for carrying out this study. The research question was found to be in line with GT question format: “*grounded theory questions tend to be oriented toward action and process*” (Strauss and Corbin 1990, p. 38).

T2DM management among WAs involves action-oriented processes as it seeks to explore subjective meanings in which interaction with others shape their experiences.

This helps to develop the explanatory theory from the data gathered in the field. As noted by Strauss and Corbin (1990, p. 23) “*one does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge*”. As explained in the review chapter of this study, limited studies have been conducted on T2DM among African immigrants globally. In addition, T2DM management is not well explored and understood in terms of the process involved in managing T2DM among WAIs in the UK. GT methodology can help in addressing the exploration of T2DM management among WAIs in the UK. Adopting GT was found suitable for addressing the aim of this research, which is reflected in the history of the methodology.

3.7.2 Historical Context of Grounded Theory

Theory generation in GT requires a comparative method of analysis, which involves going back and forth between inductive data collection and analysis (Charmaz 2014, p1: Gary 2013). GT gives the researcher focus and flexibility while offering tools to conduct research successfully. Grounded theorists develop theoretical analyses from the data collected from the beginning of the study. By trying to understand what occurs in the research settings, context, and participant’s lives by explaining their statements, actions and interpretation to make analytic sense of the phenomenon of study.

It is important to give the background of GT and the history about how GT came into existence. This is because the lack of knowledge and inadequate mentoring about the origin of GT by young researchers has led to muddle and erosion of the method (Stern 2007). To avoid muddling and erosion of this methodology, I will discuss the origin of GT and how it relates to the approach used in this study.

Glaser and Strauss developed GT at a time when theories were only generated and approved by elite scholars at the time. In the early 1960s, there was tension between qualitative and quantitative research methodologies in the USA. There was a dominance of quantitative research over qualitative research especially in sociology at that time; in response to this imbalance, there was a shift in the use of qualitative research in sociology from life histories and case studies to participants’ observation (Holton 2008). These qualitative methods had not been theorised, explicated or codified before this period (Kenny and Fourie 2014). Following the use of qualitative

methodology in participants' observation in sociology, sociologists Strauss and Glaser used qualitative research methodology to study patients' death and dying in the hospital (Glaser and Strauss 1967). Their aim was to close the gap they described as "*the embarrassing gap between theory and empirical research*" (p. 7). While working on the study, they refocused qualitative research on methods of analysing collected data. This led to the development of GT as a method, which was published in their 1976 book of *The Discovery of Grounded Theory: Strategies for qualitative research* (Charmaz 2014, p. 5). The development of the technique was with the purpose of "discovery of theory from the data" as reflected in the title of their book (Glaser and Strauss 1967, p. 7).

GT development put qualitative methodology in per with quantitative methodology (Charmaz 2014). In this case, GT made it possible for researchers and students to generate theories in the area they are studying. Hence the impact of this development on allowing me to develop a research question with the aim of generating theoretical explanations for T2DM management process among WAIs living in the UK. This made it possible to have theories in any area of research without the need to seek approval from a group of scholars or leading researchers in a field (Kenny and Fourie 2014). One of the main purposes of developing GT was to challenge the development of precise theory or hypothesis based on previously accepted theories in quantitative research before data collection is carried out (Heath and Cowley 2004). Glaser and Strauss criticised the emphasis placed on the "verification" and "acceptance" of a theory by a circle of top researchers before it is accepted (1967).

Quantitative researchers at that time believed in conceptions of scientific method while emphases were placed on objectivity, generality, reproduction of study, testing and verification of competing hypotheses and theories. The quantitative approach is based on positivists' beliefs, which separate themselves from the study they design and carry out. The researcher is a passive observer who collects data as "fact" but does not participate in creating them. Positivism led to a quest to "test" and "validate" instruments, research replication design and verifiable research findings.

GT is concerned with the development of a theory that is grounded in the data collected. The process of GT development involves the simultaneous collection and analysis of data, repeating data collection and analysis back and forth (Charmaz 2014; Bryant and Charmaz 2007). In Glaser and Strauss' argument, the theory can

be “discovered” which requires the researcher to enter the field devoid of any preconceptions and ideas (1967). This notion has been criticised by scholars and has led to development of different GT schools (Holton 2008: Kelle 2007: Charmaz 2006). The theory generated is categorised as “substantive” and “formal.” Substantive theory aims to explore a broad area of sociological interest (Roman et al. 2017). Substantive theory in GT refers to a set of explanations that accounts for the phenomenon of study within a specific area. A substantive theory can be a product themselves or they may be further developed into a formal theory using higher levels of conceptualisation and abstraction into wider contexts and groups (Hallberg 2006: Glaser and Holton 2004). Substantive theory can be best understood in the words of Glaser and Strauss (1967, p. 41) “*By substantive theory we mean the formulation of concepts and their interrelation into a set of hypotheses for a given substantive area.*” A theory has to be substantive because it goes beyond the identification of concepts; it has to have the ability to explain the interrelation within the concepts to form a set of hypotheses. A substantive theory is mainly not the end product of research; it is the basis upon which grounded formal theory is formulated (Glaser and Strauss 1965). A formal theory provides an explanation for a set of phenomena that has broad use and application across different study areas. The discovery of formal theory by GT took qualitative research beyond the usual use as a prelude to quantitative research. However, with the ground-breaking development of GT by Glaser and Strauss, there are issues that arose because of the methodology, which has been criticised by scholars.

3.7.3 Critique of Grounded Theory

A debate in GT has caused arguments about the emergence of theory from the collected data and the role of previous theoretical assumption, which is known as theoretical sensitivity (Kelle 2007). Theoretical sensitivity is a concept that explores how researcher’s insight into the research, how attuned they are to the complexity of participant’s words, their ability to reconstruct meaning from the data gathered from participants and the capacity to separate the pertinent from that which is not (Strauss and Corbin 1990, p. 40). Glaser (2004) argued that the pre-framework of other schools of GT blocks theoretical sensitivity as they enter the research setting with predetermined ideas. It is advisable that researchers distance their personal and

temperamental positions from the analysis while conceptualising the theory. Strauss and Corbin have used different techniques such as questioning, far-out comparison and the flip-flop to improve researchers' sensitivity in analysis (Heath and Cowley 2004). Charmaz (2014) in her argument concerning theoretical sensitivity explained that it is inescapable as it is to be encouraged.

One of the major criticisms of GT is that scholars have questioned the development of a theory that is described to be grounded in the data collected without the views of the researcher. This has however been criticised as it ironically represents the stand of one of the roots of positivist epistemology (Kelle 2007). The importance of this can be seen in the contribution of Strauss and Glaser's epistemological beliefs. Boychuk-Duchscher and Morgan (2004) argued that Strauss and Glaser's different perspectives on theory emergence from the data are due to the epistemological beliefs of both scholars. Strauss, on one hand, is a sociologist that had a background in sociology with an emphasis on qualitative method while Glaser, on the other hand, who had a sociology background with emphasis on quantitative research. The background of both researchers played an important part in their separate independent work on GT. Later developments of GT by both authors attempt to remedy these shortcomings in the method. In addition, other schools of GT have been developed.

Ramalho et al. (2015) explained that GT since inception has evolved into three major approaches to the methodology. Strauss and Glaser (1967) put forward Classic GT, Strauss and Corbin (1990) presented evolved or "Straussian" GT and finally Charmaz (2000) presented CGT a postmodern GT (Birks & Mills 2015; Ramalho et al. 2015). All three approaches share a common goal of developing a theory that is grounded in the data collected. However, they differ in several aspects of carrying out these approaches (Ramalho et al. 2015; Giles et al. 2013). I now go on to discuss each approach and why classic and evolved GT were not adopted for this study.

3.7.4 Schools of Grounded Theory

3.7.4.1 *Classic Grounded Theory (Glaserian)*

Classic GT is a fundamental methodology of qualitative research (Roderick 2009; Holton 2008). This methodology is known as classic GT as it is the basis of all other

forms of GT. This is the first type of GT that was developed by Glaser and Strauss (1967). This approach is different from other GT approaches due to the ontological and epistemological assumptions, which have been suggested to operate within a post-positivist paradigm (Charmaz 2006). In addition, the role of the researcher also differentiates this approach from other GT approaches. The research is advocated to be independent of the researcher. This means researchers are expected to have a neutral stance towards data and remain objective in the research process. This method is advocated for not starting with a preconception but with the aim of generating new substantive theory from the collected data in the study. This approach supports the view that each individual experiences a basic social psychological problem (Foley and Timonen 2015).

Literature review is viewed to be an important aspect of classic GT. The approach advocates that literature review has to only be conducted after data collection and analysis have been completed (Glaser 1978). In classical GT, literature review is conducted after the data has been collected and analysed. This is unlike other qualitative approaches where literature review is first conducted before collection as it helps in setting the scene for the study within knowledge in the area of study (Creswell 2013). One other difference is how the research question is generated in this GT approach. Glaser (2004) advocated that the researcher should not have a pre-set research question in mind before entering the field for data collection. This is because it is expected that the research question should emerge from discussions with participants in the study. I personally do not agree with Glaser in this aspect of classic GT because research question is important to select methodology and to know the type of data to collect. Not having this may not give justification for the data that has been collected for the study. Glaser (1978) continued that researchers should not enter the field for data collection with preconceived notions or deductive hypothesis of concepts important to the phenomenon: "*the problem emerges and questions regarding the problem emerge by which to guide the theoretical sampling*" (p. 25). I believe that Glaser's effort to avoid being influenced by the literature has removed the importance of the researcher in the data collection process.

Furthermore, I feel a researcher has been in contact with the literature so this cannot be avoided. It will be better if Glaser suggests researchers to keep an open mind and allow the data to speak to them.

Data analysis in classic GT promotes coding through comparison of events to reveal broad patterns and trends that emerge as categories. Glaser proposed that theoretical coding involves the development of 18 coding families (Böhm 2004). These theoretical coding families are to be used in assisting in the analysis process to allow the emergence of the theory. There have been arguments concerning the different approaches developed by GT scholars in emerging theory. The theoretical coding by Glaser was argued to be complex with little descriptions on how to go about the theoretical coding and can only be accessed by highly skilled researchers with vast experience of qualitative research (Bryant 2009). Also, Glaser (1978) argued that allowing the theory to emerge from the data ensures “theoretical sensitivity” instead of “forcing” theory. Although I agree with Glaser in allowing the theory that emerged from the classic GT study to be grounded in the data, however, ignoring the literature can be viewed as a positivist stance. This philosophical positivist assumption of this approach has been criticised, as the researcher is required to adopt a neutral stance on the theory discovery process (Hallberg 2006: Bryant 2002: Charmaz 2000, p. 523). Having highlighted what makes classic GT different from the other GT approaches, the approach was not seen to be suitable to answer the research question for this study.

3.7.4.2 *Evolved (Straussian) Grounded Theory*

Evolved GT methodology expects an inter-subjective relationship between the researchers and their participants, especially as the research process evolves (Strauss and Corbin 1998). Strauss’s approach to GT allows conducting literature review before or during data collection and analysis. However, Strauss and Corbin (1998) divided literature reviews into general and substantive literature types. It is suggested that a general literature review can be carried out at the start of the study while substantive literature can be left until after or during data collection. Strauss’s approach to GT explains that researchers can enter the research field with pre-identified research questions. This might particularly arise from literature review and experiences of the researcher (Creswell 2018: McCallin 2006). Glaser (2004) countered this stance insisting the aim of GT is to generate new theory as against Strauss’s approach that corroborates the researchers’ preconceived ideas and

understandings of the phenomenon with the generated theory. In this argument, I believe the stance of Strauss does not present firm believe in their response to criticism from when GT was discovered. The idea that literature can be done prior to data collection should be a yes or no stance. Having to allow certain literatures but not others makes the approach appear not to have structure.

Evolved GT allows open coding practice, which includes the conceptualisation of solitary occurrences. In addition, evolved GT rests on axial coding which involves the reassembling of data after the open coding of the data. Axial coding is important in this GT approach. Essential questions: "*Who, When, Where, Why, how and with what consequences*" (Strauss and Corbin 1990, p. 116) are asked to examine the relationships between categories of the phenomenon in the data.

Strauss's coding paradigm involves the use of condition, context, action/interaction strategies and consequences as related to a category (Strauss and Corbin 1998 p. 96). This coding paradigm is explained under axial coding. Axial coding involves the constant comparison of data, which reduced the numbers of codes and collected them together (Kolb 2012: Corbin and Strauss 1990). Axial coding helps to show the relationship between the concepts and its properties. Categories are at the peak of the hierarchy and they unite the concepts to reveal a theoretical explanation for the phenomenon under study (Dey 2007: Hughes and Jones 2003). The process of axial coding allows for the emergence of the theory in the study. Strauss and Corbin's method of coding paradigm has been argued to be easier for novice researchers to understand and follow in carrying out GT (Bryant 2009). However, axial coding has been criticised for being too mechanical and procedural and so takes away from creative analysis (Charmaz 2014).

In this type of GT, verification can take place through constant comparison and capturing multiple perspectives in relation to the generated theory. The methodology has been criticised for being too mechanical (Charmaz 2014: Glaser 2004). I feel this approach might limit creativity of the researcher with the data, having to follow such mechanical methods might limit the influence of researcher on the data.

Following the outline of some of the important aspects of the evolved GT approach, it was decided not to adopt this GT approach for this study. This is mainly because the epistemological stance of this approach has not been made explicit and so can be subject to much interpretation (Charmaz 2000, Glaser 1992). There is a mix of subjective and objective assumptions in the approach. For example, the approach

recognises the issues of preconception among researchers before entering the field as they agreed it is difficult to suspend perceptions about a topic (Strauss and Corbin 1990). However, although this GT approach was found to be close to answering the research question of this study, it was not adopted. This is mainly because the approach is not fully philosophically defined which makes adopting it difficult and unclear.

3.7.4.3 **Constructivist Grounded Theory**

CGT advocates for social constructivism instead of the single process or categories as explained in Strauss and Corbin (Evolved approach). The CGT approach places emphasis on diverse worlds and multiple realities and the complexity of specific world, views and actions. Charmaz (2000, p. 510) argued that “*grounded theory methods have come under attack from both within and without. Postmodernists and poststructuralists dispute obvious and subtle positivist premises assumed by grounded theory’s major proponents within the logic of the method itself*” Charmaz (2014) places emphases on the views, beliefs, values, assumptions and feelings of individuals that are conducting the study. CGT differs from evolved GT in terms of axial coding which is optional in the analysis process and so may not be carried out (Charmaz 2006). In addition, a core concern of participants in terms of core category may not emerge from the analysis. This is mainly due to the multiple constructions that might emerge from the analysis. Finally, CGT places more emphasis on the involvement of the researcher in the process of generating a theory. Glaser (2002) has come out to attack the stance of this approach saying “*the researchers’ interactive impact on the data is more important than the participants. Constructivism is used to legitimate forcing*” (p. 4). Although Charmaz has been accused of using constructivism to discount participants concerns as pushing researchers’ professional concern ahead, this was in concern with the argument that the tactics of analysis are important which is dependent on the researcher (Holton 2010: Glaser 1992). I disagree with this opinion; this is because the involvement of researchers enhances the concerns of participants. Researchers influence the process of theory generation. Instead of ignoring this influence, it is best to acknowledge the impact of researchers and how they might contribute to the theory developed as advocated in CGT.

CGT is not meant to discount participants' concern which is the main aim of conducting the study in the first place. The approach is mainly putting forward the need for researchers' perspective in the analysis of data. As Charmaz (2014) emphasises the theory developed is dependent on the researcher and not despite the researcher. The differences in the three schools of GT discussed are presented (see Table 3.3). In the case of this study, CGT was adopted as it is suitable for the aim of this study, which is to understand the experiences of WAIs in managing T2DM in the UK. This approach allows me to acknowledge my impact as a researcher in this research process. In addition, there is a need to explore the experiences of these individuals as highlighted in the research question. I believe CGT is the most suitable GT approach to answer the question as it allows the multiple constructions of participants to be addressed and analysed. This will allow the generation of theoretical explanation that accounts for different views from participants.

Classical (Glaserian)	Evolved (Straussian)	Constructivist
It begins with general interest (Empty mind)	Have an idea of where to begin (Preconceived idea)	Have an idea of where to begin (Preconceived but open mind)
No literature review until after data analysis	Literature not directly related to phenomenon can be review before data analysis	Literature related to phenomenon can be reviewed before data collection (Sensitising concept)
Emerging theory, with neutral question	Forcing theory, structured questions	Use unstructured questions to develop theory
Focus on developing conceptual theory	Theoretical description	Focus on developing abstract concepts to theory
Theoretical sensitivity gained from immersion in data	Theoretical sensitivity from methods and tools	Theoretical sensitivity from method and researcher
Theory generated is grounded in data	Theory is interpreted by an observer	Theory generated is dependent on researcher
Credibility of theory is derived from its grounding in data	Credibility of theory is derived from method rigour	Credibility of theory is derived from method rigour and researchers' reflection
A basic social process needs to be identified	Basic social process need not be identified	Basic social process needs to be identified by researchers
The researcher is passive, neutral and detached, exhibiting discipline restraint	Researcher is active	Active and involved researcher in theory generation process.
Data reveals the theory	Data is structured to reveal the theory	Data is constructed in revealing the theory
Criticised for taking an objective position	Takes an interpretivist position	Presents a subjective position

Table 3-3 Schools of Grounded Theory Comparison

Adapted and Modified from Jones and Alony (2011)

3.7.5 Common Steps in Grounded Theory

Although the differences in the main schools of GT have been highlighted as presented (see Table 3.3), several common aspects of GT run through all GT approaches (Charmaz 2006). These basic features include the following

- Conduct data collection and analysis simultaneously
- Actions and processes are analysed rather than themes and structures
- Comparative methods are used
- In developing series new conceptual categories, data is always drawn from both narratives and description.
- Development of inductive abstract analytic categories through systematic analysis of the data.
- There should be an emphasis on theory development instead of describing or analysing a current theory.
- Theoretical sampling should be adopted in the sampling process.
- Variation should be searched for in the studied categories or process.
- Pursue developing a category instead of covering a specific empirical topic.

The first five bullet points represent the basic features of GT study. The extent to which these features are presented in a study depends on the variation of GT adopted in the study (Charmaz 2014).

Following these common or basic features of GT, all three main schools of GT were consulted in carrying out this study. This is because of the blurred lines between these schools of GT. Therefore, although CGT was adopted for the study, processes followed in the study were also influenced by the other schools of GT.

3.7.6 Data in Grounded Theory

Qualitative researchers gather data that are rich and with great depth. Glaser (1978) explained that all is data, encouraging the use of observation, interview and focus group session and quantitative data in collecting data for GT. Strauss and Corbin focus and encourage the use of qualitative data for analysis and generation of data, which can include interview, observation data, or diaries (Strauss and Corbin 1998). GT journey begins with researchers' entry into the field to gather data. It is imperative that the process utilises accepted and suitable tools and provisional concepts to allow rich data collection. Charmaz (2006) suggests several data collection approaches can be combined in gathering rich data for a study. Some of

the suggested approaches include compiling detailed narratives such as transcription from tapes of interviews, extensive field notes after observations and collection of participants' personal accounts or documents. These approaches can immensely contribute to gathering information-rich data. How data is collected has consequences and affects the generated theory and how the phenomenon is viewed (Charmaz 2014).

In this study, the data was collected mainly through interviews of participants. However, following Glaser's (Glaser 2004) famous quote "All is data", all sources of data encountered in the data collection stage were included in the analysis process for this study. Sources such as diaries or any document that participants are willing to share with me were considered as data and analysed along with transcripts of the study as presented (see Table 3.4).

Data	Type of data	Sources
Primary data	Interview Observation Conversation	<ul style="list-style-type: none"> • Participants response • Support group observation • Daily living activities • Religious places • Participants photo/albums
Secondary data	Literature	<ul style="list-style-type: none"> • Electronic literature as data • Food timetable • Photo/album • Hospital appointments and consultations

Table 3-4 Data Sources

3.8 Adopting Constructivist Grounded Theory

This study adopted a constructivist approach to explore the relationship between categories identified in exploring T2DM management among WAIs. CGT is a type of GT that was developed by Charmaz (2014). This approach is suitable because of the constructivist nature of the phenomenon in this study (Jones and Alony 2011).

Several considerations make this approach suitable for this study. This is because of the need for exploration of the topic of this study and suitability meeting the aim of this study. In addition, CGT allows researchers' philosophical stance to be expressed in the research, thereby acknowledging the role of the researcher in the analysis. Finally, CGT is an abductive approach that allows theory to emerge from participants' data rather than testing or verification of hypotheses. These are some of the aspects of CGT that were considered and allowed the suitability of this approach for this study.

Individuals' management process is a construction of how they feel and the interpretation they attach to the process. This makes the theory generated a composite of social constructions of participants and the researcher's analysis in the study. CGT was adopted in this study to understand the processes involved in the management of T2DM among African immigrants in the UK. The reason for adopting this approach is based on the need to get further insight into the management of T2DM management as it affects WAIs. By exploring processes involved in the management of T2DM management among WAIs, a theoretical explanation was then generated from the data collected in this study. This was to assist in better understanding of T2DM management in this population.

It has been argued that all grounded theorists acknowledged that coding and categories are selected based on the researchers' interpretation of the data that highlights the integral position of the researcher (Kendall 1999). Therefore, Charmaz (2014) argued that theory is generated because of researchers' construction and not that the theory is discovered despite the researcher. As argued by Charmaz (2014, p.30) knowledge is a construction by participants and the researcher and therefore is subjective and highlights the researcher's involvement in interpreting data. This world needs to be treated as construction of created by the researcher and therefore is subjective and highlights the researcher's involvement in interpreting data (Charmaz 2006). Following these arguments, it was decided to adopt the CGT as

advocated by Charmaz (2000). My involvement in every step of the process was acknowledged and discussed how this affects the data analysis and interpretation process.

CGT addresses some criticisms raised against earlier versions of GT. CGT presents the method and advocates against the mechanical application of it (Charmaz 2014), because GT depends on the voice of researchers while fragmenting the participant's story. CGT allows researchers to adopt GT without endorsing the earlier version of the method that assumes an objective external reality, a passive, neutral or detached narrow empiricism of the quantitative approach. Instead, GT starts with the acknowledgement that social reality is multiple, constructed and therefore takes researcher's position privileges, perspectives and interactions into account reality as part of the research. Constructivist notions of GT shed away the idea of a neutral observer and value-free researcher. By adopting a CGT approach, the researcher can move GT further into the realm of interpretive social science consistent with a Blumarian's emphasis on meaning without assuming the existence of unidimensional external reality (Charmaz 2000, p. 521). This theoretical perspective of CGT was able to answer some of the criticisms of GT as this approach arises from the interaction between researcher and participants with the researcher's perspective being part of the process.

3.8.1.1 Justification of Literature Review in Constructivist Grounded Theory

CGT argued that literature review can be conducted at any stage during a study (Charmaz 2006). Charmaz (2014, p.30) explained that “sensitising concepts” are sets of interests and general concepts that are identified from the review of the literature and the background knowledge of the researcher. Sensitising concepts can be used as a point of departure to form interview questions, to look at data, to consider interviewee responses and analytically think about the collected data (Charmaz 2014, p.31). Dickson-Swift et al. (2006) argued that this would not be used to force preconceived ideas on the emerging theory; instead, it will assist in recognising and understanding concepts that are emerging from the data. Suddaby (2006) warned against some misconceptions among GT published articles including the use of the methodology as an excuse to ignore the literature.

Charmaz (2006) argues that existing concepts and theories should be viewed as “problematic” while also acknowledging the value of other scholars’ work. According to Kelle (2007) induction, as advocated by GT, does not advance knowledge instead, abduction should be advocated in research. He explained that abduction makes use of previous knowledge in the area while adding value to what is already known. He further explained that abduction can only be achieved if literature has been reviewed to know what is already known about the topic area and how the current research differs from previous works and adds to them. Dey (2003) summarised the main steps in conducting a literature review in GT. These include the identification of an area of interest while trying to avoid theoretical preconceptions and theoretical sensitivity. GT should be done through analytical procedures and sampling and finally to stop when theoretical saturation is reached. Scholars have debated the aspect of identifying an area of interest and trying to avoid theoretical preconception. Bryant (2009) argued that this presents a problem when researchers are asked to prepare a proposal that needs to situate the planned research in the body of existing knowledge in the area of study. In addition, Dunne (2011) further argued that researching an area with little or no awareness of the details of the research issues and associated literature might lead to the reproduction of a research area that is already well researched.

Instead, to keep an open mind and acknowledging the ideas brought into the research is a way of avoiding the pitfall of not having background knowledge of the

research area. Indeed, it can be argued that it is a person's prejudice that enables them to produce innovative and alternative models of the time (Bryan 2009).

In order to achieve theoretical sensitivity, researchers have been encouraged to avoid going into the study with strong predetermined ideas. Dey (1999) explains the call for researchers to avoid predetermined ideas in research does not mean to be devoid of all theoretical ideas about the area they study. Instead, it implies to have an open mind, which does not mean empty head. He argued that it is how the researcher's prior knowledge is used that makes the difference as they can use this to inform the analysis rather than to direct it. As part of this study, a literature review was conducted before data collection. This was done to provide rationales for conducting the research (Dunne 2011). Reviewing the literature was part of the requirements in the proposal for this study to show that the study can make original contributions to knowledge. It was noted that there were limited studies in the area. A detailed account of the review findings has been discussed in chapter 2 of this thesis. Although there were limited studies in my research area this, it is not a limitation or barrier to using GT approach for this study. The decision to carry out literature review prior to collection of data allowed better positioning of the contribution of this research to the field of T2DM management among immigrant populations. In addition, literature was used as a source of data for the analysis of the research findings. The literature was used to clarify issues raised in the findings of this study, which helped in theoretical discussions (Charmaz 2006). Using the literature in this approach allowed dialogue with conversations within the research area on T2DM management among WAIs. This study was positioned with current knowledge in this area due to the use of the literature.

Goulding (2017) explained that CGT encourages innovation particularly in the presentation of the researcher's perspectives, ontological position and practices within the research context. In addition, there are practical needs to review the literature before data collection. For example, funding bodies require researchers to demonstrate knowledge in the area before funding can be granted which requires prior literature review. Ethics committees ask for an overview of the background to the study before ethical approval can be granted (Bowen 2006: McCallin 2006). The methodological expectation of GT users and the requirements of research funding applications and research ethics committees can be challenging for researchers. The knowledge of researchers in their field of research may influence their preconception

even prior to using GT approach. As there is awareness of the knowledge in the research area before research can be designed. Therefore, the process of designing a study and conducting it means that the study was conceived as a result of knowledge of the research in the area of study. Therefore, following their arguments, CGT explained that the researcher's ideas/ preconception should not be removed from the analysis of the data as this influence and contributes to the data analysis process. In addition, the role of the researcher is largely recognised in qualitative research (Flick 2013). This is because the qualitative researcher has a higher influence on the research process due to the level of interaction and contact with participants than in quantitative research. Therefore, this challenges the idea of objective theory development as it has been argued that it is not possible for the researcher to produce subjective-free research in the form of a theory in this context (Flick 2013). In addition, Charmaz (2014) argued that knowledge seen as fact is a construct of ideas of what is to be accepted as facts. Putting together knowledge is a construct of the researcher, which is a process of social interchange. This approach then shifts the attention to the researcher instead of just the data as argued in classical and evolved GT. This perspective presents knowledge as a construct that is dependent on the interaction between the researcher and others and the environment of the research (Lincoln et al. 2011). Since the researcher plays a major role in constructing the knowledge that is presented as "theory discovered", it is important to acknowledge the ideas and preconception of the researcher and how this influences the process of data analysis to theory discovery.

3.8.2 Researcher's Preconception/ Ideas

One aspect in which CGT differs from the other approaches in GT is the argument that researcher preconceptions and ideas are acknowledged rather than removed or ignored. This is because the researcher plays an important role in the process of data collection and analysis (Charmaz 2006). These processes are influenced by the preconceptions and ideas of researcher gained through one or more combination of training, literature review and experiences (Creswell 2018). According to Charmaz (2006), "*what you see in your data relies in part upon your prior perspectives*" (p. 54). This highlights the need to acknowledge the prior knowledge and perceptions of the

researcher, emphasising the need to discuss my experiences, knowledge and perception and how they may influence.

In the selection of this research topic, I am not “neutral” researcher. This is to say that my interest in chronic illness among WAIs was brought into this study. A social process such as T2DM management mainly involves range of subjective experiences that affect individuals and their interactions with others in the management process. As healthcare researcher with background in social sciences where personal accounts of individuals are important, i appreciate the importance of subjective accounts in exploring the different aspects of illness especially chronic illness.

Academically, having been biochemist at the University of Jos, Nigeria, contributed to shaping my philosophical stance. I was trained in biomedical processes that occur in the cells of human, plant and animals. This training was more clinical and therefore there were positivist elements in the course. During this time, I had no idea of the why questions as we worked on metabolic processes occurring in cells. I took the data presented as fact and did not question the process of construction of these facts. During this period, population health was not paramount to me, especially why people choose to do some things they do and how these affect/ influence their health.

From personal experiences in Nigeria, we assumed that living a healthy lifestyle was for the rich as it is seen to be expensive. We see physical activity as something to do only when there is a need to do it. We see the need for leisure physical activity like exercises. However, we do lots of mandatory physical activity; this is because many of our daily activities require physical activeness. Activities such as walking, running, and manual washing as many do not have washing machines, cooking from fresh produce as most food items are not processed. In general, we do many of our daily activities with a lot of energy spent in the process. In addition, our diet, on the other hand, is mostly carbohydrate-based, with less refinement or processing as most food items come straight from farm to the market where we buy them for consumption. It can be said that the high energy burned during mandatory activities are replaced by the high-energy diet and large portions consumed.

On the other side, when I moved to the UK for my master programme in public health, the way of living here was very different from how I grew up. Here I realise activities were simplified and fewer mandatory activities are needed, from using

machines to wash clothes to ordering items online to shopping for packaged food items and the cheapness of fast foods. I noted high importance placed on leisure physical activity like swimming, going to the gym for exercise, biking, hiking and many more. This intrigued me and this was when I started looking into the way of doing things here and how different it is from my country.

I worked on this area for my master dissertation, where I used qualitative methodology to inquire from Nigerian students their lived experience of students studying in the UK. I explored the contribution of change in environment on different aspects of their health. In the end, they reported how they still eat many of the diets from home country while adopting some English meals, which they said were mostly fast food. Few registered in gyms due to the low level of physical activity they were getting, while others just mentioned reduced physical activity level. In general, they kept on with the high-energy content diet from home country while also adopting some fast food meals in their diet but have little or no means of expending the energy consumed in the way of mandatory physical activity, they do back in their home country.

Following these findings, I realised that change in the environment affects/ influences the health of individuals, especially migrants. I started researching the literature and then found that African immigrants are three times more likely to develop T2DM than the general population (Diabetes UK 2015: NICE 2012b). In addition, they have been reported to have a high complication rate from their T2DM (Pramod et al. 2017: Diabetes 2016a). This highlights the concern that there is an issue with the process of T2DM management among African immigrants. In order to find out what the contributing factors to managing T2DM among African immigrants are, this study has been designed to explore the process of management of the condition. This is with the belief that findings from this study can contribute to designing interventions to help African immigrants achieve better management regime for their T2DM condition and reducing the risk of developing complications.

The need to state my preconceptions and experience in this study is to inform readers of how the idea of the study emerged. In addition, CGT requires researcher to make their preconceptions and experiences known so that this can be used in reviewing the findings of this study (Bryant 2009: Charmaz 2006). Furthermore, this starting point with my preconceived ideas and experiences can show me as the researcher how I have grown while also showing my readers on how my thinking has

been influenced by the research process and the analysis of the data from this study. The CGT consider the researcher's contribution and sees me as part of the research process (Charmaz 2006). This means the personal and professional experiences that have been discussed in this section contributed to the meanings, understandings and analysis of this study.

3.9 Chapter Summary

This chapter has presented my argument on the research gap that needs to be addressed from the literature review section of this study. Following this was the need to explore the T2DM management using a qualitative methodology, which found more appropriate than a quantitative methodology to answer the research question generated from the literature gap identified. I further went on to adopt GT as a more suitable approach than other qualitative approaches to answer the research question for this study. Selecting CGT for this study was based partly on my philosophical stance as a researcher. Charmaz's CGT was mainly suitable for this study as it acknowledges researchers' preconceptions as part of the theory development process (2014). In addition, the approach facilitates the clarification on the research as a construct of our understanding of what participants narrate as their experiences. The approach allows literature review to be carried out at any stage of the research process, which further informs the identification of research gaps for this study. This contrasts with Glaser's classic GT that opposes conducting literature review before data collection. This I have argued does not allow identification of research gaps to be based on evidence, which then casts doubt on the contribution to knowledge being made by the study. Finally, the preconceptions that I bring to the research through both personal and professional experiences were discussed as this influenced the design and carrying out of this research. The next chapter (Chapter 4) focuses on the design and methods adopted in answering the research question for this study.

Chapter 4 Research Methods and Data Analysis

4.1 Section One Introduction

The previous chapter (Chapter 3) discussed the process of adopting a methodology and the rationale for the selection of CGT approach for this study. This chapter then follows with the presentation of the methods and analysis that were employed for conducting this study in accordance with the adopted CGT approach. This chapter is into two sections. Section one presents the methods that were employed in this study. CGT methods used are found to be most suitable to answer the research question of this study. The adopted methods follow the research design, study population and the means of gathering the data, which are presented in this section. Section two of this chapter presents the data analysis that was carried out in this study. The process of analysis as explained in CGT were followed and presented in this section.

4.1.1 Summary of Study Methods

The recruitment of the participants for this study commenced in March of 2017 and was concluded in March of 2018. The primary method of data collection was through in-depth interview sessions (see Table 3.4 for detailed data sources). The recruitment of participants for this study was based in London council. The recruitment setting was mainly through support groups and communities. In total thirty-four qualitative interviews were conducted which is adequate for this study as theoretical saturation was achieved at this point.

4.1.2 Research Design

Data collection was undertaken through individual interviews with recruited participants. Following the exploratory nature of this study and the methodology adopted, it appears appropriate to use open-ended questions, which allowed participants to give detailed responses that can then be used to build the theory thereafter (Charmaz 2014). Questions asked later in other interviews were modified to reflect the theory that is emerging from earlier data collected and analysed. Broad topic questions were initially asked to prompt start of conversation; interesting

aspects were then explored developed to further probe emerging categories. Concurrent data collection and data analysis were carried out as explained by grounded theorists (Charmaz 2014: Strauss and Corbin 1998: Glaser 1992: Glaser and Strauss 1967). Therefore, appropriate research tools that are suitable for data collection in GT have been adopted to carry out this study.

4.1.2.1 *Participant Inclusion and Exclusion Criteria*

Individuals invited to participate in this study were West African born individuals living with T2DM who migrated to the UK from WA. Due to the need to focus qualitative research onto a relatively defined homogenous group to enhance its usefulness in practice and reduce variation, only WAIs adults living with T2DM were recruited in this study (Patton 2005).

Although the sample population in this study are relatively homogeneous as only WAIs were recruited, there are still some differences that exist among WAIs due to the different West African origin of these participants. One of such difference is that participants in this study migrated from four West African countries (Nigeria, Ghana, Gambia). It was expected that there might be some differences in experiences. This is important to keep the heterogeneity of participants in relation to the findings in this study. However, there are expected to the similarities in stories of participants as a result of the shared cultural, lifestyle and environmental features that exist among West African countries.

Individuals that meet the study inclusion and exclusion criteria were contacted to join the study (see Table 4.1.1).

Inclusion criteria	Exclusion criteria
West African descent	Non-West African descent
Immigrants	Refugees and Asylum seekers
First generation immigrants	Second generation immigrants
Male and Female	
Permanent residence	Temporary residence
18years and above	Below 18years
Living with T2DM	Living without T2DM

Table 4-1.1 Participant Inclusion and Exclusion Criteria

4.1.3 Pilot Study

The need to pilot studies has been established in the literature (Ismail et al. 2017; Kim, 2011; van Teijlingen et al. 2001). However, this is even more important for studies done among groups that are not easily accessed. For this study, the pilot study was conducted in the South of England. This proved to be difficult in recruiting WAIs living with T2DM. The main reason for this was the small population of Africans immigrants living in this location. Six interviews were conducted in the pilot session of data collection. Although the number was limited, the pilot was useful in restructuring the research tool for the main study. It was important that a pilot study was carried out as it allowed issues that might not have been anticipated to be addressed before entering the field for the main study, such issue is the recruitment of participants for research studies.

4.1.4 The Recruitment Process for Main Study

The data collection process for this study was very interesting and challenging. Participants in this study were recruited from T2DM support groups and community settings in the London area (see Table 4.1.2). Several of the support groups were very welcoming and introduced me as the researcher to their members in case they were interested in participating in this study. After introduction to the group, I was given opportunity to address the congregations, discuss the purpose of conducting the study. I left contact information for individuals that were interested in participating in the study.

This led several participants to contact me where I sat at the back of the group during the lunch break of meetings. However, most participants that expressed interest in the study were more interested in having an on the spot data collection or quick survey administration. This was found interesting as it was anticipated that participants would be eager and willing to share their stories on managing T2DM during the design of this study. This further confirms why no study has been conducted a qualitative exploration research among this population in the UK in relation to T2DM. I realised people were interested in participating in the study from the numbers of people that showed interest after introducing the study. However, only a few were willing to have an interview session to tell their story of living with T2DM. I was informed that most African immigrants living in the UK have several

jobs or are working more than six days in a week. This made it difficult to spare any time for a qualitative data collection in the form of interviews. For example, one of the participants that granted me an interview works 6 days a week on 12 hours night shifts. This made it very difficult to spare time for an interview session.

Mainly people that declined mentioned being busy in general and finding time for sitting down to be interviewed was not convenient for them. Another reason was the issue of confidentiality in participating in this study, there seems to be lack of trust even when informed that the research will not use any identifying elements of their response. Others mentioned how they feel apprehension about research in general as already found in the literature (Bonevski et al. 2014: Quinn et al. 2012: Mfutso-Bengo et al. 2008). It was later noted that the issue of confidentiality was not about the research itself but their reservation of talking about their T2DM struggles in general.

To achieve the aim of this study, which requires a qualitative data collection from participants, it was decided to give potential participants the option of conducting the data collection via telephone. Participants were given my contact details with the option of calling me when they are ready for the interview or they can give me their contact details and when they will like to be called. This arrangement made it possible to get some participants to arrange interview sessions at their own convenience.

Study sites	Location	Interaction	Participant recruited
Diabetes Management support groups	London area	Presentation by researcher	24
Community	Church	Discussion with congregation	7
	Mosque	Imam introduced researcher to potential participants	3

Table 4.1.2 Participants Based on Recruiting Sites

4.1.4.1 *Contacting Patient Support Groups*

Participants from the support groups were recruited based on pragmatic and theoretical reasons (See table 4.1.2). The decision was pragmatic as there was a need to recruit WAIs within support group settings and explore any differences between those recruited within these settings and those from the communities. In terms of the theoretical decision of the recruitment, the support group was important as it helps in understanding the differences in the management of those within support group settings and those within the communities. This is essential to the study, as better management has been reported among those that seek education and support than those that do not. Therefore, this study explored management issues of their condition between those attending support groups and those that do not attend such groups as well as other issues emerging from the interviews. Five support group sites were selected and contacted for access to recruiting members for this study. In three sites, meetings were held every month while two sites hold meetings once in two months. The meetings are usually at the end of work period in two sites; this is to ensure everyone can attend after work hours. However, three sites hold meetings during work hours between 11am and 1 pm. Refreshment is provided on all sites for members to socialise and network.

4.1.4.2 *The Patient Support Groups*

The study was conducted in five out of the thirty-three boroughs in London. The rationale for choosing these locations has been explained (see Section 1.7). Support groups for PLWDM with T2DM were accessed in the communities. Patients were recruited from Diabetes UK support groups. Diabetes UK is a registered charity with the aim of raising awareness about T2DM and providing support and accurate information for PLWDM and the general public (Diabetes UK 2019). The support groups were identified from their online pages and contacted for recruitment. Volunteers run the organisation of the support group meetings. The meetings mostly run every month at a location. Some other support group sites meet once in two months. Speakers are invited to discuss accurate information about managing T2DM and share booklets to support their condition. The general aim of these groups is to create an environment where peers can support each other in living with

T2DM while helping members stay up to date on current T2DM management information.

Although there was a low response rate from participants both in the support group and the community recruitment, there was no provision of incentives to participate in the study. This is mainly because of the limited resources available for this study. Furthermore, the need to move the study to London resulted in unexpected expenses.

4.1.4.3 ***Community Settings***

Recruitment in community settings was mainly through snowball sampling technique (Noy 2008). Snowball sampling is a technique employed to recruit participants where one recruited participant gives a name or assists in recruiting another individual for the study (Atkinson and Flint 2001). A participant might direct the researcher to locations where other individuals that meet the study inclusion criteria for recruitment. This technique has been criticised for recruiting using researcher's network and might exclude certain individuals outside the network (Browne 2005: Biernacki 1981). However, this sampling technique is particularly useful in recruiting participants from minority groups or who are difficult to access (Sadler et al. 2010: Atkinson and Flint 2001). The use of community setting has been reported as a recruitment strategy in research among participants that are difficult to recruit (McCullagh et al. 2014). Since the target population of this study are minority group and difficult to access for research, this sampling technique was employed. This was due to the need to recruit more participants for this study. Participants recruited in support groups were asked for referrals to potential participants that may be interested in this study. Furthermore, religious organisations were also visited met for the possibility to recruit participants for this study. Religious places have been identified as an avenue that can be used to reach participants for research participation (Joseph et al. 2016). Both churches and mosques were approached for the opportunity to recruit their members in this research. Some activities organised by the religious places were attended to meet potential participants. In addition, the participant information list was given to head of the religious places who acted as the gatekeeper in assisting with the recruitment of their members for this study. This

highlights the need for recruitment of participants through gatekeepers, which enhanced the recruitment phase.

4.1.4.4 ***Need for Gatekeepers***

There was a need to employ a different strategy to recruit participants for this study due to the difficulty of getting participants to join this study. One strategy employed was the use of gatekeepers to assist in the recruitment process. Following the need to recruit within support groups and community settings, the assistance of gatekeepers was found to be paramount in the recruitment process. A gatekeeper is an individual, institution or organisation that has direct access to the study population, whose support or endorsement can convince people to participate in the study (McFadyen and Rankin, 2017). Gatekeepers are usually of importance in accessing individuals from hard to reach populations (Wanat 2008).

Gatekeeping is a process where respected individuals can allow access or limit access to a researcher's potential participants (McFadyen and Rankin 2017; Joseph et al. 2016). Involving gatekeepers in a study is usually needed as a strategy to recruit participants and is part of ethical principles for studies involving hard to recruit participants. The endorsement of research is usually needed if the study requires vulnerable or hard to reach participants. WAIs have already been described as hard to reach group in research due to the underrepresentation of this group (Shaghghi et al. 2011).

Gaining the support and access of gatekeepers can be time consuming depending on the gatekeeper and their requirements to give access to potential participants, as they are an integral part of the recruitment process from minority communities (Ellard-Gray et al. 2015).

Knowing the types of gatekeeper and preparing accordingly before approaching them for their support for the study was influential to the success of gaining their support. The different types of gatekeepers that were encountered in this study and how they supported this study at different stages of recruitment are presented (see Appendix 5).

In addition to securing gatekeeper's support, another strategy was for me to join community groups, support groups and participate in activities that are required to establish rapport with potential participants before recruitment for the study (DiCicco

and Crabtree 2006). For this study, I joined church groups, registered for events, seminars that were organised by these groups. I also gave presentations on T2DM management for PLWDM in the groups. I not only joined some of these groups but was well known and seen as an active member of such groups. This allowed me to continue to develop rapport with members of the group.

4.1.4.5 *Sample Size and Sampling Rationale*

Sample size in qualitative research has been argued among scholars, due to the nature of conducting qualitative research which gets to a diminishing return where no new idea is generated in new data collected (Vasileiou et al. 2018; Mason 2010). Wilmot (2005) explained that researchers need to understand the purpose of research to determine the sampling technique for the study. It was argued that the research objectives, target population, study budget/ resources and other factors contribute to the sample size of a study (Ritchie et al. 2013). Due to the factors that affect sample size in a qualitative study, very few sources have provided guidelines for actual sample size (Mason 2010). Generally, qualitative research recruits a smaller number of participants than quantitative research (Lewis and Ritchie 2003). In qualitative research, a phenomenon is only required to appear once to add value to the study as a qualitative study aims to understand the depth not breadth of the phenomenon in a context. According to Creswell (2013), GT sample size should range between 30-50 interviews. In general, studies have suggested that the sample size in a doctoral project should range between 15 and 50 samples (Ritchie et al. 2013; Mason 2010). However, this loose guideline depends on theory development and data saturation. Data collection is expected to end when data saturation is achieved where data collected is not adding any new information to the study (Mason 2010; Wilmot 2005).

Purposive sampling technique is a type of qualitative sampling technique that is used to recruit only participants that meet the inclusion criteria of the study (Palinkas et al. 2015). This sampling technique was adopted and used to recruit participants that meet the criteria of this study for inclusion. Purposive sampling has been described as an initial sampling technique that can be used to recruit participants in GT before theoretical sampling can follow (Bagnasco et al. 2014; Charmaz 1990). In this study, this point was achieved after interviewing thirty-four participants for this study (See

section 4.2.8). Theoretical sampling is used in GT after the initial purposive sampling.

4.1.4.6 *Theoretical Sampling*

Theoretical sampling was employed after initial purposive sampling as recommended in GT methodology (Charmaz 2014). This is to fully develop the categories and concepts of the theory (see Section 4.1.4.6). This process is seen as an essential aspect of GT, which is compulsory in developing a theory. This process involves the identification and selection of potential sources that can contribute to exploration of emerging aspects of a theory (Charmaz 2006). Theoretical sampling does not aim to represent the population but to identify rich data sources that can contribute to the theoretical enquiry of the area of research (Neill 2006). Theoretical sampling recruit participants based on their ability to contribute to the theoretical development of the study (Butler et al. 2018). Theoretical sampling directs the data collection process until theoretical saturation is achieved as no new codes are generated following data collection (Charmaz 2006).

In this study, key issues that directed the recruitment of participants contributed to the theoretical sampling technique employed. After the initial purposive sampling technique that was employed by recruiting participants that have migrated from WA to the UK and are living with T2DM, there was a need to recruit participants that were diagnosed with T2DM in the UK. This is because there was a need to explore the process of being diagnosed with T2DM in the UK to understand the category. This was mainly to fully explore the effect of migration on the management of T2DM among WAs that were diagnosed in WA and those diagnosed in the UK. In the initial analysis stage, an important concept that emerged was the dietary preparation. Theoretical sampling was used to recruit participants that have support with healthy diets and the experiences of those that live alone and have no support to prepare healthy diets. For example, sampling was done in sites that had diverse members from other West African countries aside from Nigeria to include their views in the discussion. In addition, follow up interviews were organised with participants that agreed to be contacted for further information concerning this study. As explained by Charmaz (2006, p.111) having the opportunity to conduct follow up interviews with key informants, allows clarification and confirmation of major ideas for theoretical sampling. Theoretical sampling was used to refine categories that were

emerging and to develop their properties as interviews progressed. For example, in the data analysis, a category identified was in changing dietary habit. The first participant interviewed discussed how diets in the UK were defined by sugar-filled diet. With subsequent interviews, this idea was confirmed with other participants and clarified. Theoretical sampling allowed me to check my ideas against realities while moving between categories and data. The clarification was that Africans view Western diets as filled with sugar once it is processed. This is different from their mainly fresh and less processed meals. As interviews and analysis, progressed key concepts and themes were explored and clarified among different participants in the recruitment sites. Particular attention was paid to narrations that differ from other narrations to help in understanding the different variations of the concepts that have emerged. Theoretical sampling was carried out throughout the data collection process to ensure saturation of concepts have been achieved.

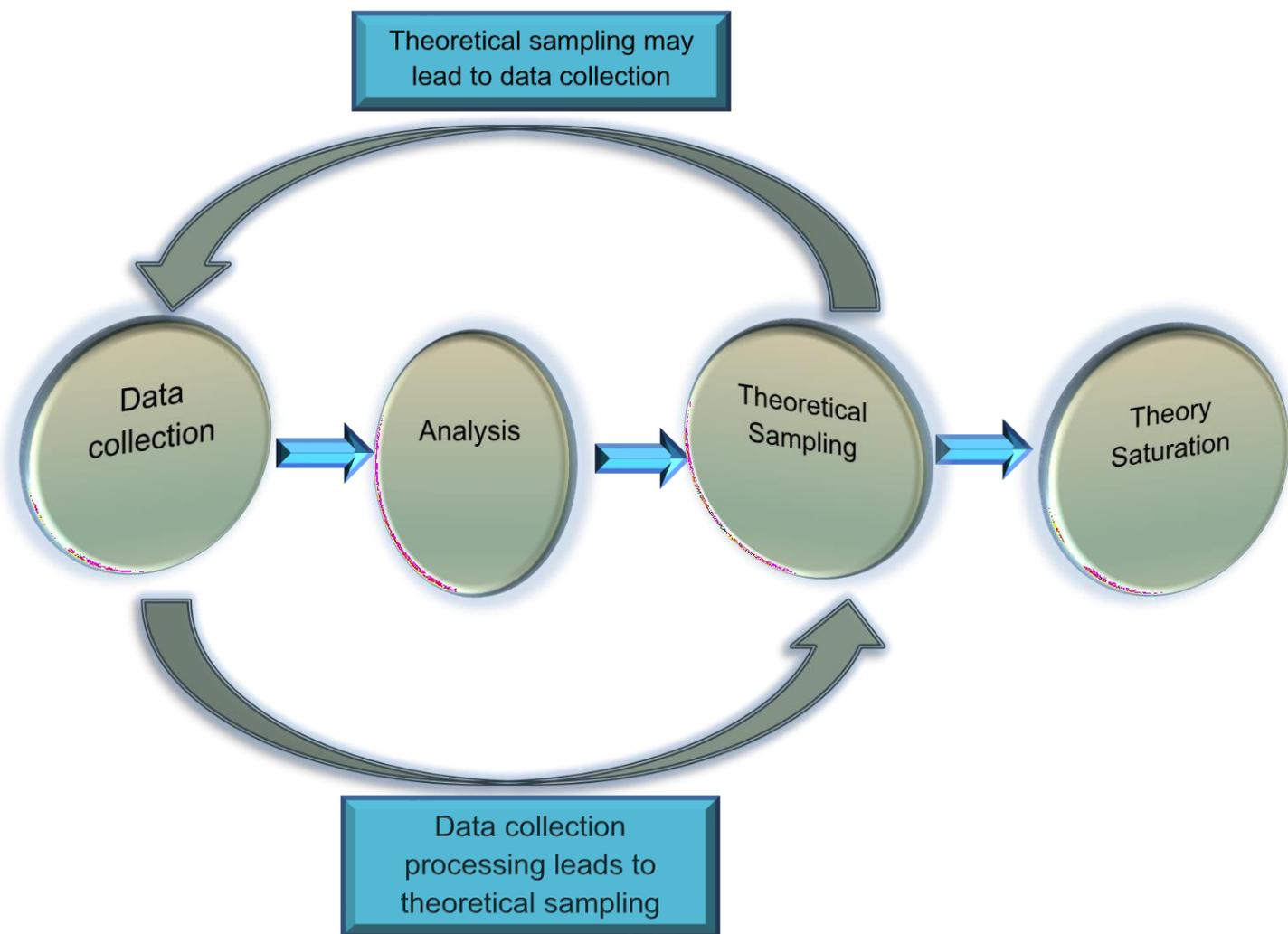


Figure 4-1.1 Cyclical Process of Data Collection in Theoretical Sampling

Figure 4.1.1

Figure 4.1.1 presents the cyclical process involved using theoretical sampling. The data collection is continued based on the aspects of theoretical categories that need to be explored further. The data collection process mainly involved conducting interviews with participants on aspects of the emerging theory that needs exploration.

4.1.4.7 **Research Tools**

Semi-structured interviews were carried out with each participant. Semi-structured interviews are a popular interview format used in qualitative studies (DiCicco-Bloom and Crabtree 2006). They are generally formulated around a set of open-ended questions and sometimes can lead to engagement in a dialogue between the researcher and the interviewee (Zhang and Wildermuth 2017 and Doody et al 2013). The semi-structured interview is particularly useful when free listing to explore the meanings of individuals' experiences (Groleau et al. 2006). This has been reported to be useful in understanding barriers to self-care by individuals living with chronic diseases (Bayliss et al. 2003). As the aim of this study is to understand the management of T2DM among WAs including exploring aspects concerning barriers in managing their condition, semi-structured interview was appropriate and adopted. An individual interview method was adopted instead of group interview method. Individual interview involves discussing with one person per interview session; this method of interviewing is used when delving deeply into social and personal matters as concerning individuals (Rubin and Rubin 2005). This method allows individuals to share more personal experiences than when interviewing in groups. Group interviews such as focus group interview are used to get a wider breath of experiences as it affects the public (DiCicco-Bloom and Crabtree 2006). Due to the personal experiences involved in the T2DM management process and the aim of getting social and personal experiences in this study, an individual interview was found to be suitable. During the individual interview, an interview guide was used to guide the conversation for each session (see Appendix 6). The interview guide is used to direct the flow of conversation in a semi-structured interview. This is usually pre-set open questions that can be used to assist interviewee's discussions to relate to the aim of the study (Jamshed 2014). The interview guide is useful in achieving the optimal purpose of the session by exploring discussions in a systematic and comprehensive way to keep the interview focused

on the topic (DiCicco-Bloom and Crabtree 2006). The interview guide was designed to ask open questions that allowed participants to give informative responses to their experience of living with and managing T2DM. It was also created with the idea of sensitising concepts that were highlighted from the literature during the review for this study and researchers background knowledge on the topic (see Section 2.5.3). This is only to help guide the direction of the conversation to allow participants to give useful information to this study (Kallio et al. 2016: Charmaz 2014). Each interview session lasted an average of an hour, but a few sessions ran for over two hours. This is found to be adequate due to the amount of data generated after transcribing each session. Average interview session has been reported to last 30 minutes or more than an hour to allow gathering of adequate information from the participant (Jamshed 2014). Each interview took place in quiet but public places such as meeting rooms in support group premises, and homes of participants if preferred but safety of both participants and researcher was paramount for all interview sessions arranged (Bahn 2012).

4.1.4.8 *Conducting the Interviews*

Mainly the participant set the interview, so all interviews were conducted in settings preferred by the participant. Most of the interviews were conducted on support groups premises (n=13). Homes of participants was higher (n= 11) than general open venues such as church and mosque (7 and 3 respectively) (Table 4.1.2).

Following the research question and aim of this study, participants were invited to share their experiences of managing T2DM in the UK.

Participants were encouraged to recount their experiences of managing T2DM from the diagnosis point to the present time. Because all participants were first-generation immigrants from WA, their narrations span from their experiences in living in WA through to managing T2DM in the UK. All data collection was done with ethical considerations for the process.

4.1.5 Ethical Consideration

The ethical application for this study was received on 09 January 2017 with a formal letter on 11 January 2017 (see Appendix 7). In conducting any research that involves interactions with individuals especially when recruiting participants and approaching

gatekeepers, there was a need for ethical considerations (Crowhurst and Kennedy-macfoy 2013). Research ethics is defined as the worldwide set of structures governing the way any research that involves the interaction of the researcher (s) with other humans, data relating to humans and animals are designed, managed and conducted (Resnik 2011). It is guided by the principle that ethical research is more than collecting information but deals with dignity, rights, safety and well-being of the researchers, participants, potential participants and anyone else involved in the research (Stuart and Barnes 2005). This principle should be embedded in the design, execution and dissemination stages of the research.

In consideration of ethical issues concerning the recruitment of participants in this study, four main principles of ethics were followed. These principles were autonomy, beneficence, non-maleficence and justice.

4.1.5.1 *Autonomy*

This is one principle of ethics that highlights the need for research to protect the decisions of recruited participants. In qualitative research, this principle is mainly honoured using of informed consent (Owonikoko 2013). In this study, all participants were given the information letter (see Appendix 7). Participant information sheet contained details of the study and what type of information will be required from the people that decided to join the study. This was followed by the consent form which participants signed after satisfaction with the information provided about the study (see Appendix 9). Participants were constantly reminded that they could opt to withdraw from the study at any time and without a need for explanation. All participants consented to the use of tape recorder during the interview, although they were offered the alternative of note taking.

4.1.5.2 *Beneficence*

Another principle of ethics is the beneficence of the research, which is referred to as “doing good for others and preventing harm” (Orb et al. 2001). In ensuring the principle of beneficence is followed through the data collection for this study, all identifying information was removed from the report of this study to avoid causing harm. It links to ensure that confidentiality was paramount by removing identifying information of participants (Hewison and Haines 2006). In this study pseudo name was used to protect the identification of participants in this study. The use of

pseudonyms can protect individuals and preserve anonymity in the reports generated from research (Crow and Wiles 2008). Each transcript was assigned a pseudonym to protect their identification. In addition, all names and addresses gotten from participants were separated from their transcript. The location and names of the support groups where recruitment was carried out was not mentioned to ensure anonymity of the participants. They were informed they could decide to withdraw their interview session prior to analysis if they want to withdraw from participating in the study after data collection (Hewison and Haines 2006).

4.1.5.3 **Non-Maleficence**

This is another principle of ethics of research, “first, do no harm” to participants (Beauchamp 2007). In order to protect the participants from any unintentional harm because of participating in this study, several steps were followed. In carrying out the interview, it was ensured that participants were conformable with the interview venue. They were continuously reminded that the information shared during the interview session will remain confidential and will not be disclosed without their permission. My name and contact information were included in the information sheet so that participants can contact after their interview session for any concerns (see Appendix 8). Finally, participants were offered the opportunity to request the transcript and recordings of their interview session. One participant accepted the offer to send his interview recording, which was sent to him, others declined the offer.

Beyond ensuring that participants do not experience harm as an outcome of participating in this study, steps were followed to ensure the researcher was protected during the process of data collection. Williamson and Burns (2014) explained that the effect of research can affect not only the participants in such research, but the researcher can be affected physically and emotionally. In ensuring that the researcher was not harmed in any way, my supervisors were informed of arranged interview sessions. It has been argued that researcher can be emotionally invested in the process that can affect them “*the researcher, if more than mere competent, will be in the work emotionally as well as intellectually.... And often will be profoundly affected by the research process itself*” (Strauss 1987, p. 10). In the narration of participants, I found I got emotionally involved in their revelation of challenges and complications experienced in the management of their condition

especially while in WA. One participant who had T2DM, cancer and heart condition narrated his ordeal with managing all health conditions in both WA and the UK, having got to a point of being told he might not be able to live longer than the next day and the emotions involved in near-death experiences. Some of the narrations affected me as a researcher in my empathy for their situation. This was further impacted on me as being a West African descent, I have a better understanding of some of the challenges that they narrated in managing their T2DM in both the UK and WA.

In the cases that the participants described the challenges in managing their condition, as a researcher, my role was to listen to the issues raised and how these might affect their management process. In the use of open-ended questions as required in GT (Glaser 1978), I was prepared for the discussion to go to emotional grounds. In this study, all documentations of ethical approval for the study obtained from the University's ethical committee were presented to the gatekeepers for their approval. Accessing participants requires soliciting the help of gatekeepers in formal and informal capacities (Joseph et al. 2016) (see Appendix 5). These procedures must be guarded by ethical guidelines in every stage of the research. The head of support groups that were approached mainly requested these documents. Diabetes charity organisations were also contacted so they can place the participant recruitment invite on their websites.

There are ethical guidelines that must be followed irrespective of the ethical stand of the gatekeepers (Sanjari et al. 2014). For this study, it is even more complicated due to the issues concerning cultural ethics in research. It was difficult to manoeuvre the thin line between ethical and unethical relation with gatekeepers and participants in general. The fact that some of these expectations are not seen as unethical in the cultural stand can complicate the process (Seehawer 2018). I had to manage to work within ethical bounds while working on gaining cooperation of these individuals. An aspect of research that is not often considered when planning studies among ethnic groups are the cultural expectations from researchers. Researchers mainly focus on the ethics of conducting research and what is expected from the participants.

However, researcher should consider and cultural expectations when working with ethnic minority groups (Rinchen and Hutchinson 2018; Marshall and Batten 2004). The process should be a two-way interaction between researcher and participants interviewed.

4.1.6 Cultural Expectations from Participants

In working with minority groups such as WAIs, research ethics of the study was influenced by moral ethics of African culture. African research that considers moral ethics and ways of relating to participants has been advocated (Molefe 2016: van Staden 2011). Although participants signed the written consent form for the ethical requirement of the researcher, the important consent is their consenting words to partake in the research. This they value as more binding than only signing a written form for participation. Creating rapport that goes beyond participants/ informants to interactions are essential (Seehawer 2018). In some cases, discussion went outside the research context even with the use of an interview guide but was allowed instead of interrupting them.

Personal relations in some of these communities can be expected to continue after completion of the research. This is seen as a relationship that goes beyond participant-researcher interaction but these needs to be considered before embarking on research within culturally dependent groups (Honan et al. 2013). For example, offering refreshment is seen as a cultural obligation, although this can be declined, this was politely declined few times to avoid being perceived as disrespectful. I had to manoeuvre some of these situations as a lone researcher and not wanting to offend participants or gatekeepers while trying to gain access and cooperation but also remain professional. The depth of information gathered depended on the personal interactions that were formed with participants which, influenced study findings.

Establishing rapport in the interview setting is crucial to the depth of information participants will provide to the study (Risan et al. 2017). The purpose of the research was restated before the commencement of the interview and participants were encouraged to share their experiences. They were reminded that I was only there to listen and share in their experiences. They were asked to share any concerns regarding the study before discussions commenced and after each session.

4.1.7 Data Management

Interviews that were conducted in the support group sites were conducted after the normal session of the meetings in a private room. Where conversations occur within

the meeting times, the researcher tried to ensure privacy as the discussion takes place. Confidentiality was taken to be paramount in this study. The research code of conduct for Bournemouth University was always followed during the data collection process. Descriptive information such as age, sex, year of diagnosis, year of migration and employment status was collected to provide a better understanding of their stories (see Appendix 10).

All data relating to this study were stored in a password-protected university computer used only by the researcher. Observations and interactions outside interview sessions were recorded in the field-notes as a source of data for analysis (Driscoll 2011). Data collected will only be used for the purposes declared in the research proposal that are to fulfil the thesis requirement, presentations at conferences and publications in journals. Beyond the recordings and transcripts collected during the interviews, field notes and reflective writing were captured and utilised as data for this study.

4.1.8 Capturing Reflexivity and Use of Field Notes

Emphasis has been placed on the need to ensure rigour as part of carrying out GT; this is in addition to ensuring transparency of applying the approach, which accounts for the credibility of the study (Tucker et al. 2016). One method of ensuring these GT requirements are met is by constantly being reflective at every stage of the research process (Bringer et al. 2004).

A reflexive approach is a process where researchers are encouraged to talk about their preconceptions, choices, decisions, experiences and actions during the research process (Ortlipp 2008). An important part of this study is reflection; this is because of my relationship with the study as I can be considered an “insider researcher”. It is important to reflect on the process of conducting the study and reporting the findings for this study. According to Chirema (2007) reflection is explained as an important activity that allows people to recapture their experiences, think about it and evaluate the actions made in the process. The decision to adopt CGT essentially requires constant reflection throughout the research process. Field notes were kept during the research process to capture reflexivity (Hellesø et al. 2015). This assists in capturing my thoughts as the research is being carried out during and after data collection (Oliver et al. 2005). This way I reflected on the action during and after each interview, my conduct and style as an interviewer in asking

questions and listening to the responses (Chenail 2011). I reflected on my position as a researcher, how did I avoid leading questions, did I ask questions that provided enough probing on responses.

All notes were written in a book specially kept recording my thoughts and observations during this study. In consideration of ethical implications, this book was always to be kept with me or locked in my university drawer with no one else having access to the book. In addition, no identifying information were written in it this was achieved by referring to participants using pseudonyms (Kaiser 2009). This is to maintain participant's anonymity in case the notes get lost or unauthorised persons encounter the notes (Hellesø et al. 2015). Reflection on the entire process is how I was able to capture my perspective as the researcher reporting participants' responses as advocated in CGT. This assisted in helping me to avoid bias instead of presenting knowledge in the context of the participants in this study.

4.1.8.1 Addressing Potential Bias

I recognise myself as an "insider researcher" due to my experience of migrating to the UK from WA. Smyth and Holian (2008) explained that "insider researcher" could raise the potential of biased reporting, as the researcher represents part of the community being researched. Finlay and Gough (2008) explained that bias implies that there is an unequal reporting of reality, which can be distorted by subjective interpretation. Although another view which believes that there are multiple realities existing, rather than single realities endorses positive subjectivity instead of rejecting it as bias (Mehra 2002). As an African myself, I have some shared experiences in the lifestyle of African immigrants irrespective of T2DM status, making me a part of the group of immigrants in this study. Smyth and Holian (2008) explained that researching within one's organisation could offer a unique perspective because of the knowledge of the culture and history. This makes reflection essential in this study to maintain transparency, credibility and minimise the bias of the reported findings (Finlay and Gough 2008). This was carried out by maintaining the commitment to transparency in the research process (see Section 8.5).

4.1.9 Section One Summary

Section one of this chapter provided an overview of methods adopted to carry out this study in accordance with a CGT approach. This approach was used to conduct the data collection process of this study, which include the research design, participant recruitment and data collection phases. The design of the research involved the use of semi-structured interviews that were directed by theoretical sampling as required by CGT. Participants in this study were recruited from DM support groups and community settings with the recruitment procedure adhering to the ethical guidelines. Although the recruitment procedures adhered to the ethical approval documents granted submitted for this study, the cultural expectations of participants were considered throughout the data collection and how they related to ethics. Research sites were accessed through the help of gatekeepers with diabetes support groups and community settings such as religious places. The next section (Section two) presents the data analysis procedures of all transcripts collected from participant interviews.

4.2 Section Two Introduction- Data Analysis

Section one of this chapter presented discussions on the methods that were adopted for the recruitment, data collection of participants for this study, which are in line with CGT approach (Charmaz 2006). This approach situates the researcher as the interpreter of data who is actively translating and gaining implied meaning from participants' lived experiences and unconscious social processes. In this section, the details of the analysis of collected data are presented. My role as the researcher in the data collection, data coding, theory formulation and write up are presented.

4.2.1 The Analysis

This section presents the development of theoretical explanation for understanding the management of T2DM among WAIs living in the UK using CGT methods explained by Charmaz (2014) as described in section one (see Section 4.1.2). It was decided to use "*striving to adapt*", as example of how analysis was carried out to result in emergence of categories reported in this study. This is because *striving to adapt* it was found to be of importance and suitable for the analysis purpose as it presents the challenges that participants highlighted in their management of T2DM in

the UK. The category highlights the current state of T2DM management among this group. What they found to be important and how they overcome the daily challenges of living with T2DM in the UK. Therefore, this category was used to show the process of analysis that was carried out on all categories in this study.

Data analysis method in GT has been subjected to considerable debates among GT schools and scholars (see Section 3.8.2). There are basic steps in GT analysis that is shared by all GT schools, which included initial coding, theory emergent stage and memo writing through all stages of analysis (Charmaz 2006). All GT schools that have been identified in the methodology chapter agreed that coding is the first step in data analysis (see Section 3.7.5).

Coding in GT is the process of identifying what is happening in the data and what is the meaning that is entailed in the data as it sets up the relationship between data and participants (Star 2007, p.80). Charmaz (2014) argued that coding is the pivotal link between collecting data and developing an emergent theory as the explanation for the data.

Coding is a powerful tool that helps to make views, actions and processes visible and distinct. Coding is the essential link between the data and the explanation of their meaning. Divergence in the different schools of GT has resulted in different approaches to data analysis and coding. For example, Glaser advocated the use of 18 coding families to tease out the core category of the study (Glaser 1978). A Basic Social Process (BSP) might be identified alongside the core category (Glaser 2004). Coding in classic GT involves the creation of categories while looking out for exceptions to the category. This process involves several attempts at building a single category that can be used to explain the observed behaviour (Apramian et al. 2017). Classic GT is mainly concerned with the achievement of abstraction of the theory. A theory developed should be devoid of person, place and time (Glaser 2004).

On the other hand, evolved GT approach involves the 6 c's coding families (causes, contexts, contingencies, consequences, covariance and conditions). This coding approach, on the other hand, places more emphasis on the complexity of the methodology of analysis for the generated theory (Creswell 2013). Strauss developed axial coding which is a coding process that facilitates theoretical development and integration.

Although Glaser (2004) has criticised Strauss's analysis approach as being overly procedural and likened to thematic analysis in Qualitative Descriptive Analysis (QDA), which results in "theory forcing" instead of "emergence" from the data. This division has become a basis for scholarly debate on the nature of GT, which has further been linked, with the ontological beliefs of these GT schools. The debates that ensued have been discussed (see Section 3.7.4), my stand as a researcher has been put forward. As a constructivist, I have stated my ontological beliefs in relativism following CGT. This belief infers that reality arises from the interaction of social processes within its temporal, cultural and structural context (Creswell 2013). Therefore, the CGT coding approach was used for the analysis in this study. The interview recordings were transcribed using Microsoft Word. The transcripts were then analysed with the broad concept of GT using a bottom-up inductive approach. Following CGT according to Charmaz (2000), the method allows participants to tell their stories in their own terms.

To support the analysis process, a computer software package was used in this study. Specifically, Nvivo 11 by QSR International (QSR international Pty Ltd 2018) was used to assist with the data analysis and management process (see Appendix 11 and 12). I attended workshops on the use of the software and watched lectures on online in the use of the software. I was open to the benefits of using such analysis software in achieving efficiency and effective data management.

Several qualitative software packages are available for the management and organisation of qualitative data. There have been discussions concerning the use of some of these software packages in qualitative analysis. Some researchers have argued that the use of such packages will impose a rigid framework in the analysis process (Seale 2012). This is mainly because the use of a software package has been likened to the positivists' epistemological position. The main concern is that the use of such software will interfere with the qualitative research process, which may result in the loss of shades of meaning, and interpretation that manual analysis brings to the research (Rodik and Primorac 2015). However, the benefits of using such packages have been recognised in GT and increasingly gaining recognition. The use of qualitative analysis software packages can assist in the data management process and can facilitate theoretical sampling. Major GT textbooks such as "Basics of qualitative research" include a new chapter in the use of computer software in the analysis of GT studies (Corbin and Strauss 2015, p. 203).

Furthermore, the use of computer in research is almost impossible to avoid, hence the increase use in research (Rodik and Primorac 2015).

Although I used Nvivo software for the analysis, I continued to use manual process more especially for the constant comparison (Maher et al. 2018). All transcripts were printed out and hard copies were used in the analysis process. I found using the manual analysis allowed greater intimacy with participants' stories. I was able to experience the "nuanced interpretative analysis" discussed by Charmaz (2006). The use of both manual and computer software in the analysis allowed access to the benefits of using both methods as complimentary of each other.

4.2.1.1 *Coding in Constructivist Grounded Theory*

As argued by Charmaz (2014) coding is a construction of what the researcher sees in data even at the descriptive level in the analysis. Therefore, the coding process was conducted in a manner that aimed to bring out the meaning of participants responses by constructing their perceived meaning. The data was questioned following Charmaz (2014, p.116) suggestion which is to ask:

- What is the data a study of?
- What do the data suggest? Pronounce? Leave unsaid?
- From whose point of view?
- What theoretical category does this specific information indicate?

Coding was done line by line and then segment by segment (Charmaz 2006, p.50). Comparisons were done within data from one interview and then between different interviews. Similar concepts that seem related to the same category were brought together to form a category. Thus, the bottom up approach helped to identify codes that formed concepts and finally categories. All thirty-four interviews conducted were coded as described in this section.

It is essential to ensure that the theory generated fits, works, is relevant and modifiable (Glaser 1992). To meet the criteria of theoretical fit, all transcripts were read several times over and then initial coding was done. Following the importance of coding, all data collected was coded to identify the meaning of participants' responses. Initial coding was done to familiarize me with what is happening in the data. This was done by assigning a label to each line that reflects what is happening

in the data. The process of coding each transcript is presented in the following sections.

4.2.1.2 **Initial Coding**

Initial coding is the first step in GT data analysis which helps to understand what is going on in the data (Blair 2015). Coding is the initial defining and labelling of researchers' understanding of actions from participants' stories (Charmaz 2006, p.47). Initial coding allows the researcher to conceptualise the data. Initial coding tends to code data line by line by identifying actions and incidents rather than characters in data (Appendix 11 presents an example of line-by-line coding of an excerpt from an interview). This allows the researcher to move beyond description to an abstract analysis of the data (Corbin and Strauss 2015).

Following Charmaz's (2006) recommendation for initial coding which is to: "*remain open to exploring*" the data (p. 47), researchers are encouraged to keep an open mind during the initial coding stage. This is to ensure that the researcher allows the data to lead them in the analysis and what can be learned in the process.

Initial coding allows the researcher to be open to the possibilities of any theoretical development that can emerge from the data. Furthermore, initial coding helps the researcher to remain open to other analytical possibilities in the data. By staying close to the data, initial coding ensures that the emerging theory from further analysis is grounded in the data (Charmaz 2014: Holton 2010: Glaser 1978). As discussed by Charmaz (2014), various strategies can be used for initial coding.

Firstly, I went ahead to write the story of each participant in the way that I understood them from the accounts of the participants but through my own perspective. This allowed me to gaze through their story from my own understanding. This was done for all the transcripts as the interviews were transcribed and going through the analysis process. In doing so, I was able to identify places of similarities and differences between each individual's stories. After this, I was able to identify common threads that ran through the participants' stories while also noting where these stories differ from each other before preparing for the next interview. My role in the analysis was obvious as my decisions directed the words selected to code and how I presented their stories, highlighting Charmaz's (2006) discussion "*we may think our codes capture the empirical reality. Yet it is our view: we choose the words*

that constitute our codes" (p. 47). My role as a researcher in the analysis was acknowledged instead of ignoring it in the process.

Following this, I tried various interpretations by telling my own story of their story while looking to the data to support the interpretations, discarding any version that is not supported by the data. This then allows me to find the concepts that best describe the interpretation of each story told. Concepts are phrases that give a summary of the ideas presented in participants' narrations.

Secondly, I used sensitising concepts to assist in the coding of the transcripts. Sensitising concepts are themes that give an idea of the concepts that have been identified in the literature (Charmaz 2014). Using sensitising concepts to generate codes in studies has been argued to not influence the theory generated (Charmaz 2014). Sensitising concepts offers ways of seeing, organising and understanding experiences of participants as embedded in the literature (Peters 2014). The contribution of sensitising concepts can depend on the direction which the research takes as findings emerge from the study (Bowen 2006).

I utilised sensitising concepts that emerged from the qualitative synthesis during the systematic review carried out prior to data collection in this study. These concepts were found to be important as they were recurrent in the narrations that participants discussed in the qualitative studies synthesised (see Section 2.5.3). For example, religion was an example of sensitising concept that was used in the data analysis. Similarly, dietary challenges as a sensitising concept were used in the coding for this study. These concepts were assisted in easy identification and coding of transcripts as concepts emerged. However, they did not influence the theory that was generated in this study. Instead, they allowed better identification of codes while contributing to the analysis process.

Thirdly, coding for gerunds which are verb form that functions as a noun and usually end with –ing has been suggested in initial coding (Charmaz 2014: Glaser 2012). Gerunds were used to label blocks of texts that represent the action and meaning within the data, coding for gerunds assist to code actions instead of events in this study. Furthermore, Charmaz encouraged the use of gerunds to enhance the process of theoretical sensitivity as it can nudge researchers into enacted processes in the research (2006, p. 49).

Further, on in the analysis, in vivo codes were also used in the coding process. In vivo codes are codes that refer to special terms that participants used in their

narrations (Charmaz 2006, p. 55). In vivo codes are known to help preserve the meanings of participants' views in the analysis. I paid attention to the language used by participants so that meanings attached to some of the words can be captured in the analysis.

In doing the analysis for the study, I immediately initial coded each transcript after transcribing. This is to ensure that I remain immersed in the data and codes are closely linked to the data. Each transcript was line by line coded with words from the data that encapsulate the meaning of the line or words that represent the action that is ongoing in the data. The initial coding allows for fast coding and there was no dwelling on the categories being discovered as an open mind was kept throughout the process. Each action and incident were then compared to the others within each transcript and then among all transcripts (see Table 4.2.1). The narratives were broken into blocks of action and this allows for coding the action rather than the person which facilitates deeper reading of interactions of actions with the story. Incidents were then compared against similar incidents, code to code to develop common categories that represent larger chunks of the data.

Data extracts	Code	Action
<p>Extract section 2</p> <p>Yes with the diagnosis of diabetes mellitus I took part in some sessions of ...ummmm...nutritional education. We were at the session in endocrine diagnostic centre of the hospital where the diagnosis was made ...ummm and ... there was emphasis of changes in diet... and exercise as a form of managing diabetes... ummmm... I was already aware of that but I choose to go through every session and the lectures... the nutritionist was involved so I attended all of the sessions. They gave us food types and how we should approach...what kind of items to combine and umm... generally given advice on diet and exercise too but these were things I was already used to know as of my health... I would say I also benefitted from the sessions because...ummm... there were specific aspects of shopping that I found interesting... cos umm... it meant changes to approaches to grocery shopping... yes so I would pay a lot of attention to packages and nutritional information and ummm... it was quite an eye opener finding out how much sugar is in stuff...that was a valuable experience I had....</p> <p>Extract section 4</p> <p>Yes ummm...just a simple illustration.. coming from Nigeria ...west African... we have sugar only in teas and coffees but not in anything else...okay so I arrive in the UK and there is sugar in everything else expect in teas...so ummm....i wasn't particularly...ummm....i didn't have a sweet tooth as such like cakes and chocolates and all that even before the diagnosis of diabetes. Umhhh ...I ...while I was still courting my wife...she encouraged me to drink tea without sugar.... So I was already drinking tea without sugar and I still remember her teasing</p>	<p>Getting diagnosed</p> <p>Going to lectures</p> <p>Learning about diet</p> <p>Finding interesting aspects</p> <p>Paying attention</p> <p>Knowing content</p>	<p>Seeking dietary knowledge</p>
<p>Coming from Nigeria</p> <p>Noting sugar use</p> <p>Not having sugary food</p> <p>Emphasizing sugar use</p>	<p>Making dietary efforts</p>	

<p>me about leaving the bars of maltesers..you know maltesers the chocolate and ummm...toblerone and the these other small balls... and stuffs... I had you know I had packages with stuff...you know my room...I became a lot more cautious about the sugar content of food and everything...in orange juice...I will particularly look for those with the least amount of sugar and I will reduce the quantity that I take and ummm..and...ummm things like bread</p>	<p>Becoming sugar cautious Explaining dietary differences Reducing quantity</p>	
<p>Extract section 10</p> <p>and I know that the attitude of people suffering from diabetes ummm...has changed a bit because there used to be a time if you were diagnosed with diabetes you were told no sugar at all and so people u know... had very bland meals and it makes meal time more of a burden than something to look forward to...u know there was,...ummm.... With a certain level of moderation I am able to judge when its alright to take a biscuit or not but ummm... again I will say that I have not always been a good boy (Laughing)</p>	<p>Changing attitude Avoiding bland food Understanding portion control</p>	<p>Dealing with dietary challenges</p>

Table 4.2. 1 Comparison patterns from one participant's narrative

In table 4.2.1, the patterns identified in the coloured highlights were focused code to provide general action of what is emerging from the data. This raised the analysis of the data, which resulted in the following focused codes namely: Changing, understanding moderation, improving physical activity and struggling to adapt to healthy living. This analysis provided greater insight into the process that goes on into discovering T2DM status among participants in the study. Initial coding progressed with the comparison of incidents against incidents to gain new insight into the range of topics that were discussed whilst also useful in refining codes to develop categories (Charmaz 2006, p.53). These patterns began to evolve from the data as the actions were compared with each other from the narratives, which clarify how T2DM diagnosis leads to ways of managing it among participants.

Early patterns were identified as the initial coding process was being carried out in the transcripts. To assist in the analysis process, audio recordings were listened to over again. This was followed with the analysis of the field notes that were written, especially concerning the observation that was not in the behaviour of the participants during their interaction with me. This allowed the second layer of analysis to explore the context of the interview and meaning that can be derived from these sessions. For example, I used the opportunity to gather observational data during the data collection at the support groups. In addition, I was able to observe food preparations by some participants in their home (see Table 3.4).

The initial coding started in March 2017 from the first interview; analysis started and continued through the data collection. To begin with, over 127 initial codes were retrieved after initially coding each transcript, which was a little confusing, and challenging to handle and sort through. This was explained to be a normal situation in open coding stage (Charmaz 2014: Glaser 1998). Although I tried to avoid descriptive in the coding, several of the codes were descriptive from the initial coding. This, however, was taken further to abstract codes beyond descriptive coding through the constant comparison. This allows the codes to go beyond descriptive codes to a higher level of conceptual analysis. As I continued to develop my skills in coding, it became easier for me to identify concepts in codes after the initial coding. As patterns began to emerge from the data, I returned to listen to the audio recordings, my field notes to ensure that I remained as close to the data as possible. This allows any assumption or bias made during the initial coding to be addressed (Strauss and Corbin 1990). Revisiting the original data ensures further

immersion in the data, which allowed sensitivity towards participants' attitude in managing T2DM. In addition, it encouraged new interpretations of participants' story allowing new codes to be generated (Charmaz 2006). Moving on in the analysis, initial coding was further coded using focused coding to raise the level of conceptualisation of this study.

4.2.1.3 **Focused Coding**

Focused coding is the next stage in GT analysis after initial coding. Charmaz (2006) defined focused coding as: "*using the most significant and or frequent earlier codes to sift through large amounts of data*" (p57). Focused codes can be codes that appear more frequently in initial coding or have more significance than other codes. Focused coding usually involves deciding about how initial codes make conceptual sense and which of them is more significant by categorizing the data completely. Focused coding gives theoretical direction to the analysis. It is more than just selecting codes from initial codes that interests researchers. It is more about identifying codes that integrate and conceptualise the theory emergence.

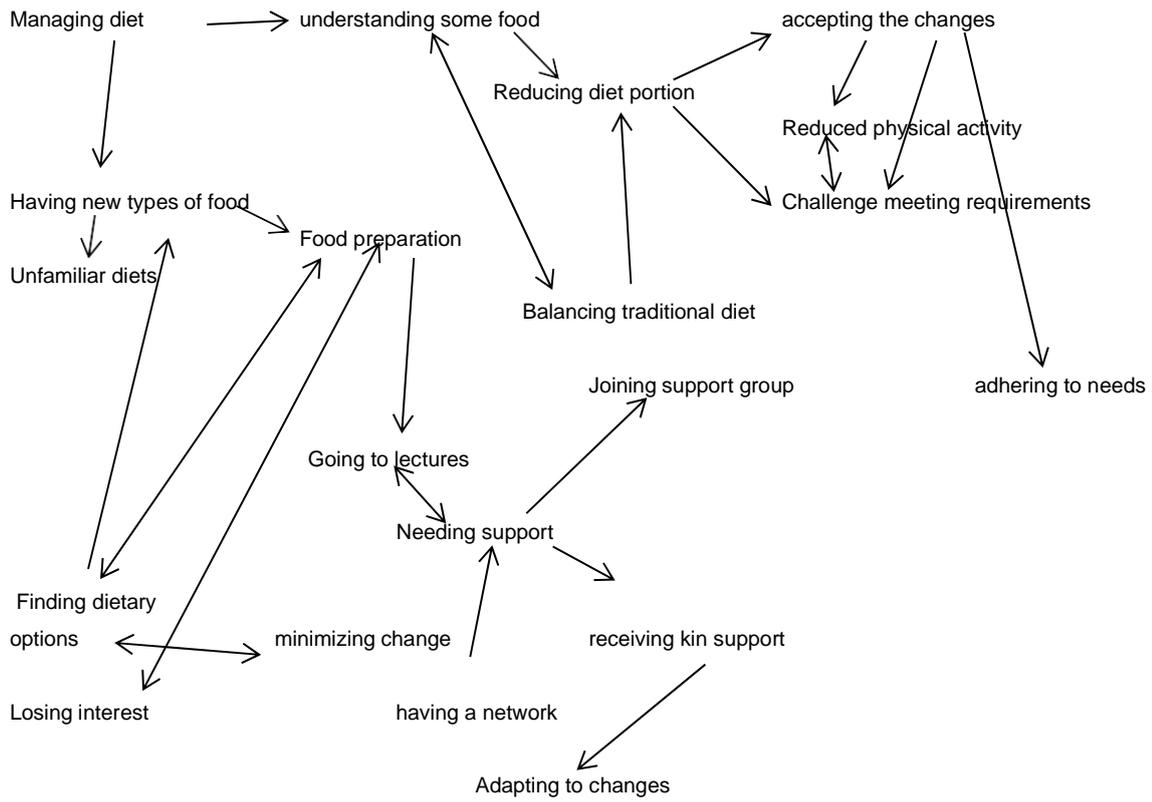
Focused coding is a process that seeks to identify prevalent codes within data and raises them to a higher level of conceptualisation (Glaser 2012).

Conceptual codes from initial coding were used to sort through and categorise data to determine their importance at an analytical level beyond descriptive account (Holton 2008). Each transcript was revisited and re-read thoroughly and then compared with the categories identified from the initial coding.

Focused coding of the initial codes that were identified was carried out to take the analysis beyond line-by-line coding to conceptualize and congregate codes that form concepts and categories in the analysis. For example, the first interview was coded as "Justifying sugar consumption". However, after the focused coding of the transcript, it was recoded to go beyond sugar consumption to "*explaining dietary differences*". This new coding captured the discussion that participant put forward in explaining the differences in the dietary habit between them and Western countries. In this case, they discussed consumption of less sugar among them than the general population. The sugar consumption was, however, not the main issue that can be highlighted so this code goes beyond sugar consumption to differences in dietary habits. However, beyond differences in sugar consumption, differences in dietary

habits captures the narration of participants in a more holistic manner which was important for the emerging theory in this study.

Changing	Understanding moderation	Improving physical activity	Struggling with healthy living
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Conceptualising: Going beyond description



Striving to adapt

Figure 4-2.1 Example of Conceptual Mapping with Messy Diagram

Figure 4.2.1 showed the use of cluster diagramming, the distribution of codes across a page to then reassemble them into meaningful arrangements. The cluster diagram was a useful technique to identify the natural groupings of the codes and their relationship, thereby raising the analytical level of categories to form unexpected connections (Charmaz 2006).

Codes were used to examine various aspects of participants' experience of managing T2DM, alternative explanations were sought. For example, the code "struggling with healthy living" also labelled as "*adhering to needs*" and "*meeting recommendations*" to reflect the subtle meaning of the initial stages of *striving to adapt* as data analysis continued. This process was continued to conceptualise the multiple perspectives of participants' narratives while ensuring that common meaning with the stories was preserved. Minor categories that were identified from the initial coding were used to sift through and categorise data in order to raise the analysis beyond description to analytical level (Charmaz 2000). Constant comparison of the transcripts and codes against early categories allowed conceptualisation of the categories. Focused coding continued with constant comparison to moving the analysis in theoretical development.

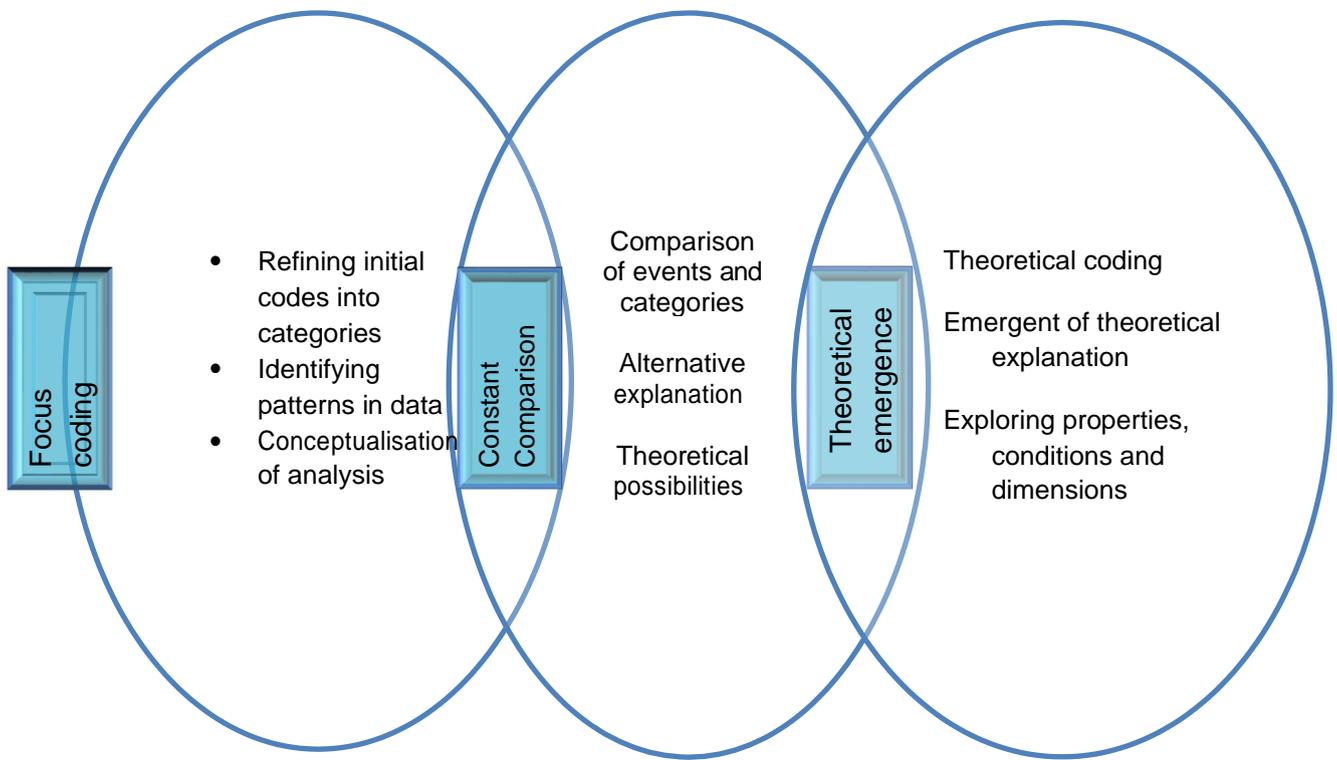


Figure 4-2.2 Developing Theoretical Category

Figure 4.2.2 showed the category development that was carried out in the analysis of this study. Focused coding was refined into patterns and this raised the conceptualisation of the analysis. Throughout the process, constant comparisons supported in raising the analysis beyond description and allowed theoretical emergence.

4.2.2 Constant Comparison

Constant comparison (CC) is one of the important steps to carry out data analysis in GT. It involves constantly comparing data to explore patterns in the data, which helps move coding beyond description to conceptual level. CC involves comparing incident with incident, incident with code, code with code, code with category, category with category and category with concept (Charmaz 2014, p. 342). CC is one of the basic steps common to all GT schools (Charmaz 2006). Charmaz (2006) explained CC to be “*making comparison between data, codes and categories advances your conceptual understanding because you define analytic properties of your categories*” (p. 179). The simultaneous data collection in GT allows the CC of interviews, which directs the development of categories and emergence of theory grounded in the data (Glaser 2012). The CC method was valuable in the development conceptualisation of an abstract rendering of the social process constructed from participants’ experiences of managing T2DM, which lead to conceptualisation.

The CC was used during the analysis of the interviews conducted in this study. I was able to collect data from participants in batches; I arranged three to four interviews within a period. I transcribed and coded each transcript before going for another data collection. This process allowed CC of all transcripts as data was collected to direct the focus of the study. This allows the researcher to bring relating codes together to form a category which forms the conceptual element in the emerging theory and their sub-categories.

Furthering the coding process, events, incidents and actions were compared between each participants’ transcript. This is to understand the relationship between participants’ experiences and meanings attached to these experiences. The comparison provided new insights into the topics discussed while also developing the categories. Colour highlight was used to emphasize the pattern and relationships between incidents among participants’ transcripts while coding (see Table 4.2.2).

Bobaro Section 8	Initial code	Focused code	Category
<p>You see when am struggling now, that is the kind of food I don't know how to bother</p> <p>See I have got no time o... even before now, before I told you about myself that I don't really eat sometimes you know so. Now ehnnn... it is just something</p> <p>Yes it is because when I switched to the healthy food, anytime I go for shopping, I spend a lot of money and am like ohh... is it because it is not Nigerian food. At times that I used to buy a lot of Nigerian food and like that but when it comes to like all this healthy food....men... even small portion is a lot of money.</p>	<p>Changing dietary habits</p> <p>Having limited time</p> <p>Not eating healthy</p> <p>Paying expensive</p> <p>Having traditional food</p> <p>Regulating portion</p> <p>Preparing food</p>	<p>Changing habits</p>	<p>Striving to adapt</p>
<p>Ken Section 4</p>			
<p>sadly I cannot afford gym but there was at time when just getting by a day was a problem but I a lot of time I just resting lying down but after sometimes I started walking short distances by increasing you know that walk until you know I could go round the block...you</p>	<p>Paying expensive</p> <p>Making efforts</p> <p>Walking</p> <p>Taking rest</p>	<p>Improving physical activity</p>	

<p>know sometimes it will take me 15 to 20mins when I started initially when I started to rest as I walked long</p>			
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Table 4.2.2 Constant comparison between Participants' Stories

Table 4.2.2 shows four coding colours to highlight the commonly identified processes: The changes in dietary habits (Green), barriers to adapting (Deep blue), strategies to adapting (Grey) and pre-migration habits (Light blue). These initial codes were then refined into focused codes that were used in comparison with each participants' narrative. These codes were used to formulate the development of a category that was constantly identified among all participants' narrative. The use of CC supported the analysis process to challenge some of my perceptions of T2DM management among this group. For example, during my early interviews, I found that changes in dietary habits were having impacts on the T2DM management of this group. Of course, I was anticipating such a view from participants, however, a perception that was reported which I had not anticipated was the access to dietary information in the UK. This was described as an important and helpful aspect of dietary changes experienced in the UK. The use of nutritional information on food packages was found to be helpful in making dietary decisions. This brings to realisation that although there are challenges experienced in changing dietary habits, there are aspects of the process that help individuals to feel in control of some of the changes. This is even more appreciated; as packaging and information are not available to them in WA. CC was continuously used throughout the analysis process and assisted in moving into conceptualisation and theorising of the data.

4.2.3 Moving beyond description to conceptualisation

Glaser (2012) has argued against differences between QDA research and GT. The main difference that separates these two types of qualitative research analysis is the conceptualisation of the data. While QDA describes the findings from the data to theme identification, GT goes beyond description to conceptualise the data thereby developing a theory as the outcome of the analysis (Glaser 1978). Using constant comparison within the data collected, GT forms concepts and categories by highlighting the pattern with the data. This is achieved by constantly comparing incidents, actions within the data with other incidents and action within the data and between data. This leads to the identification of emerging patterns and labelling these patterns as categories. It ensures that the theory that is developed is grounded in the data and goes beyond description to abstract theoretical development (Glaser and Holton 2004). Novice researchers are said to find this aspect of analysis tricky

and sometimes difficult in avoiding being descriptive in their analysis. One way that was suggested is that researchers should code for incidence and actions instead of coding for types of people, which leads to focusing on individuals, rather than what is taking place in the data (Charmaz 2014, p. 116).

To ensure that the analysis goes beyond descriptive thematic identification to the conceptual level of analysis, incidents and actions were coded in the initial coding. This was then furthered to comparing one incidence with another within the data. This then leads to the identification of patterns in the data. I had to ask some questions from the data to move the analysis process further. Glaser and Holton recommended asking: "*What is this data a study of?*" "*What category does this incident indicate?*" "*What is actually happening in the data?*" "*What is the main concern being faced by the participants?*" and "*What accounts for the continual resolving of this concern?*" (2004).

Asking questions from the data has been argued to further that analysis process. It helps the researcher think outside the box, become acquainted with the data and is very useful at every stage of the analysis (Corbin and Strauss 2015). Concepts identified were defined by their properties that are lower level concepts themselves. The concepts were then used to build up categories through comparison within each other and with other concepts to identify a higher level of concepts (see Figure 4.2.3). Furthermore, to achieve theorising, categories that rendered the data most effective and carried 'substantial analytic weight' were identified and raised to theoretical concepts (Charmaz 2006, p. 139).

Finally, a core category was identified from other concepts, as it is the one category that explains most of the process in participant's management behaviour. A core category is the highest level of conceptualisation and it integrates all the concepts in a conceptual theory development (Corbin and Strauss 2015).

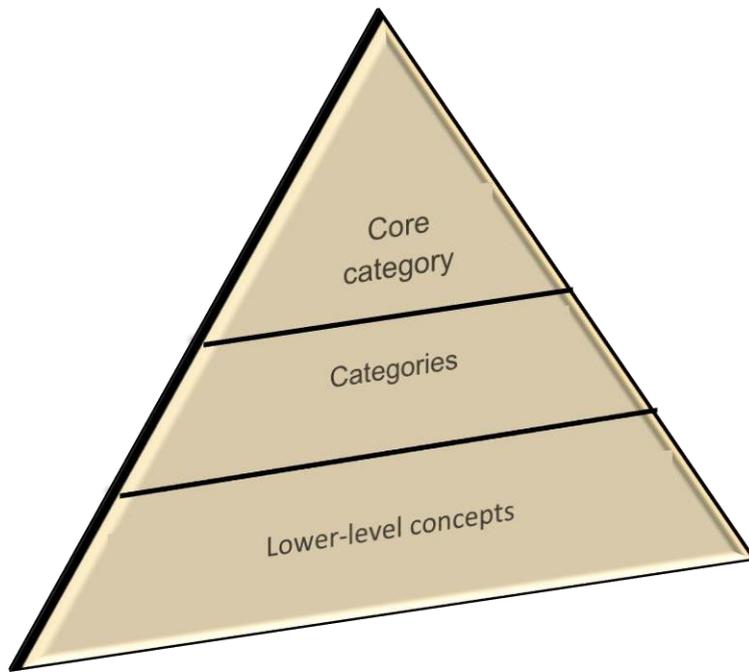


Figure 4-2.3 Conceptual Levels in Grounded Theory Coding

4.2.4 Theoretical coding

The refinements and merging of concepts result in the construction of theoretical coding that is characterised by the reality of the social phenomenon (Böhm 2004). Theoretical codes give insights into the relationship between concepts in order to develop an integrated theory (Hernandez 2009). Theory development is the result of intensive comparative analysis between and within concepts. This stage of analysis involves comparing categories to codes and codes back to data to ensure participants' accounts are thoroughly represented in the theory developed. Analysis becomes a dynamic process that goes back and forth between category, codes and data to develop a greater understanding of the investigated social processes. As coding progresses into focus coding, analysis sensitivity tends more towards how individuals perceive living with T2DM and the effect of assumptions about what is known and the influences of their condition on their lifestyle. Using these assumptions allowed for understanding the actual influences of living with T2DM in the daily lifestyle. Using constants comparison, codes were revisited and refined to further develop the categories identified in the transcripts. Questions were asked to raise the analysis beyond description to conceptualisation level, these include:

- What was their understanding of the main experiences, ideas and concepts?
- What sort of knowledge do these individuals have before, during and after their diagnosis of Type 2 diabetes mellitus?
- What factors account for this knowledge?
- How do West Africans come to experience the knowledge of living with Type 2 diabetes mellitus in the UK?
- How did they make meaning of their experiences?
- What are the important influences on the process of managing Type 2 diabetes mellitus in the UK?

To help in going further beyond descriptive analysis, I ensured that memo writing was part of the data collection and then the analysis process. Memos were written at every stage of the analysis to further move into conceptualisations of the data.

4.2.5 Memos

Memo writing is an essential step in the analysis of data in GT that cannot be avoided (Glaser 1978 p. 199). It is explained to be a pivotal step between data

collected and the analysis of the data (Charmaz 2006, p. 72). Memo helps to capture the thoughts of the researcher; it captures the constant comparison, connections and questions that are generated as the research process progresses. Writing memos helps to create interactive conversation between the data, codes and concepts identified. Memos allow the development of the analytic process, aiding the transcending from descriptive analysis to conceptual analysis. It also highlights the standpoint of the researcher. It assists in analytic construction of data and fills out categories with their properties. Corbin and Strauss (2015) explained that memo writing helps the researcher to make the necessary interactions and dialogue with the data, which indicate how concepts relate to each other.

Memo writing should begin from the stage of data collection since simultaneous collection and analysis takes place in GT. The researcher should start writing memos from the first interview and throughout the analysis process. Memos will change and mature as the process goes on and analysis moves from incident identification to concept conceptualisation to theory building. There is no specific way of writing a memo (Corbin and Strauss 2015: Charmaz 2014, p. 171). However, memos should contain ideas that occur to the researcher as the analysis progresses (Glaser 1978). This might include ideas about the identification of concepts, the properties of categories and the relationships between the categories and relationships between properties. As memos mature, it then becomes more abstract and more theoretical, proposing a theoretical hypothesis.

Memos may contain the following elements (Charmaz 2014).

- Defining codes or category by its analytical properties
- To have the process of identifying the codes and categories
- Make constant comparison between and within data, codes and categories and their properties
- Providing evidence to support the definitions of the concepts and categories and the analytical claims about them
- Identify areas that require further exploration
- Sort and order codes, categories and their properties

In this analysis, memos were written as the data collection commenced. They were used to further raise the level of conceptualisation of the data. Memos were written

continuously from the study design through to participants' interviews, analysis and until study completion to further conceptualise earlier memos.

Memos were written at the end of each interview in a field notes usually before leaving the interview premises. This is to remain immersed in the stories that have been narrated by participants. Memos were written in addition to field note recorded during interviews. Memos continuously became important tool in the analysis process of the research. In addition to reflective notes, memos became tools to record meaningful extracts from discussion record exchanges. This was further used to explore meanings and to conceptualise data analysis to theoretical development. Further discussion is presented in the findings on how memos were used in drawing conclusions on theoretical development. Memos were written throughout the stages of analysis and then sorted out to arrive at the emergence of the core category that participants recounted as the main concern of living with and managing T2DM. Memos were labelled according to the theme of the discussion they were addressing and then similar memos were compared against each other such that a higher level of conceptualisation is attained. This furthered the writing of conceptual memos that allowed the development of theoretical formulations that gives insights into theoretical maturation (Corbin and Strauss 2015: Charmaz 2006).

For example, after the initial codes were combined under the focused code "Changing". A memo was written to address the issues that were noted in the code of changing. In the memo, consideration was given to the different meaning of changing to participants in their narration.

Changing was a code that emerged from the analysis of the data. I find it that participants refer to changing in both positive and negative context. Change is something that is seen to be inevitable in terms of the occurrence of differences in the management of T2DM because of migration. However, they work on minimising the aspects of changes that they perceive as unpleasant. The main aspect of change view as such is changing dietary habits. This aspect of the study finding raises some issues in terms of what value do these individuals place on their dietary habits. Maybe they view dietary habits as cultural, religious recommendations, as a form of identity or just superior to dietary habits in their new environment, which goes beyond just having dietary satisfaction. These aspects of changes that will require further exploration.

Memo 4-2.1 Change Experiences

Memo 4.2.1 change experiences identified the need to raise data analysis beyond description to conceptualisations. Higher-level concepts identify common patterns in the experiences of participants highlighting scenarios that were commonly described in these stories. In the memo, the changes that participants experience after migration contribute immensely to their management of T2DM in the UK. The effect of changing dietary habits was seen to be vital in the process of management. Helping these individuals to understand the challenges they have with changing dietary habits can give insight into supporting them to make better choices. The meaning attached to some dietary habits needs to be established and discussed from their views. It is when this has been achieved that a way forward can be designed to support their dietary management process. In addition, some myths about unfamiliar dietary habits need to be corrected to facilitate willingness to adopt new healthy habits. All written memos were sorted to form a coherent discussion of the theory generated.

4.2.6 Theoretical Sorting

Sorting, integration of codes, diagrams and memos were inter-related processes that demanded strategies in the theoretical development as analysis progressed. Sorting analytic memos assisted the emerging theory and served as an avenue to providing, identifying and refining theoretical links. According to Charmaz (2006, p.115) *Grounded theory sorting gives you a logic for organising your analysis*. Following this sorting of memos using constant comparison was carried out in the analysis process. However, this process was not clear-cut as more than one process was identified and several categories were present. Memos written for every step of the analysis were integrated using different sorting as suggested by Charmaz (2006, p. 117).

- Sort memos by the title of each category
- Compare categories
- Use your categories carefully
- Consider how their order reflects the study experiences
- Now think how their order fits the logic of the categories
- Create the best possible balance between the studied experiences, your categories and your theoretical statements about them.

Following the steps suggested above, the process of memo sorting was experimented with using memo cards with titles of the categories to see how they fit. In addition, diagrams were used to visualise the relationships between concepts and categories, this follows the importance of relationship as explained by Charmaz (2006, p.117) "*Relationships between categories form an outline of what you cover and how you cover it*". The process of sorting assisted in establishing the relationships that emerged within the concepts and categories in this study.

4.2.7 Theorising in Constructivist Grounded Theory

The primary purpose of GT research is to present a theory (Corbin and Strauss 2015: Charmaz 2014: Urquhart et al. 2010). This is an aspect of the research that is common to all schools of GT. Theorising emphasises understanding beyond description. In this study, theorising experiences of WAIs living with T2DM in the UK involves going beyond description to conceptualisation. This is important as the research has resulted in a substantive theory of individuals' experiences from their perspectives.

Similar to most products of GT research, this study generated a substantive theory in the understanding of T2DM management among WAIs that are living with T2DM in the UK from their experiences. The theory is specific to the context of the research and is concerned with the process of T2DM management from the experiences of WAIs that participated in this research. Data collection and theory development continued until theoretical saturation was achieved.

4.2.8 Theoretical Saturation

Saturation has been defined as the point in data collection where no new information is obtained, as 'data adequacy' (Ness 2015). Saturation in qualitative research is traditionally understood as the fundamental feature that signifies study completion. Similarly, in GT, saturation during data collection signals the point of stopping data collection (Charmaz 2014). However, the saturation point in GT is slightly different from general qualitative research saturation; this is because GT aims to develop theory. Therefore, saturation is only achieved when all categories of the theory have been saturated and fully explored. Saturation is only reached when no new theoretical insight is offered in the new data collected after analysis and so can no longer generate new codes (Glaser and Strauss 1967). Theoretical saturation is

understood to indicate a dense theory that is without gaps and is relevant to the field of study (Glaser 1992).

Although the use of sample saturation to signal end of data collection has been criticised, as this means the process of generating new categories and their properties have been exhausted. This has been contested as it has been argued that due to the multiple realities in experiences of participants, this cannot be guaranteed (Thornberg 2012). Glaser (2001) explained saturation in GT to be: "*saturation is not seeing the same pattern over and over again. It is the conceptualization of comparisons of these incidents which yield different properties of the pattern, until no new properties of the pattern emerge*" (p. 191). Data collection should only be stopped when no new property of the pattern emerged from the data.

In relation to the constructivist nature of this study, the analysis aims to saturate categories using an analytical approach until theoretical sufficiency was achieved. Dey (1999) argued that, rather than claiming to have achieved saturation, researchers should aim to achieve 'theoretical sufficiency', which better fits how the researcher conducts GT. In this study, focussed coding was used to identify recurrent conceptual patterns through constant comparison until analysis stops generating new concepts or properties. After achieving well defined theoretical categories, constant comparison continued until enough theoretical codes, thick description and integration of memos was achieved. It was at this phase that the data collection for this study was stopped.

4.2.9 Section Two Summary

This section has presented a thick description of the data analysis process carried out for this study. The analysis methods of initial coding, focus coding, theoretical coding was used as explained in CGT (Charmaz 2006). Coding, constant comparative method and memo writing were used to identify codes and categories in the analysis with examples to demonstrate transparency in the theoretical accounts for the development process. These methods were employed to move analysis beyond description to conceptualisation and theorising. In addition, saturation of theory was discussed to justify the decision of theoretical sufficiency achieved and the stopping of data collection. The next chapter (Chapter 5) presents detailed findings of the analysis from this study.

Chapter 5 Findings

5.1 Introduction

This chapter presents the findings from the analysis of this study. This is the construction of theoretical categories using the methods detailed in the previous chapter (Chapter 4). As discussed, the data used in the analysis were derived from interviews with thirty-four WAs living with T2DM in the UK. The data analysis constructed three theoretical categories that provided insight into the processes involved in the management of T2DM among WAs in the UK. These are '*Striving to adapt*', focused on the efforts that participants make in following the recommendations to managing T2DM after diagnosis. '*Finding out*', explains the ways in which participants learn about their T2DM status, '*living with it*', presents the strategies that participants employ to live with T2DM as part of life.

5.2 Demographic features of participants

Nineteen females and fifteen males participated in the interviews for the study. These individuals met the inclusion criteria to be recruited for participation in this study (see Table 4.1.1). Participants' age ranges from 33 years for the youngest participant to 82 years for the oldest participant (see Table 5.1). All participants were able to communicate in English and so there was no need for interpretation service. Most participants were able to give broad snapshots of both recent and retrospective narrations of their stories to give further insight into their experiences of living with T2DM in WA and the UK. The meaning of health, living with T2DM and managing T2DM in WA (for those diagnosed in WA) and in the UK and the strategies that they employed to manage their T2DM were discussed.

	Female, n=19	Male, n=15
Age		
Range (years)	40-69	33-82
Employment		
Employed	12	6
Retired/out of job	7	9
Education		
Tertiary	12	7
Secondary	3	5
Primary	2	3
Place of diagnosis		
UK	6	5
West Africa	13	10
Nationality		
Nigeria	13	9
Ghana	5	3
Gambia	1	3
Participant recruitment location		
Support group		
Site 1	3	5
Site 2	4	1
Site 3	2	2
Site 4	1	3
Site 5	2	1
Community recruitment		
Church	5	2
Mosque	2	1

Table 5-1 Demographic Features of Participants

5.3 Constructing Theoretical Categories

Category development is an aspect of GT that is common to all schools of GT. It provides insight into the advancement of analysis beyond description to the conceptualisation of the phenomenon at a higher abstract level. This accounts for actions, interaction and operational processes of social interactions (Evans 2013). Focusing on a constructivist approach to category development, emphasis is placed on understanding the experiences of people in the phenomenon by rendering multiple statements and observations (Hallberg 2006: Mills et al. 2006). Construction of multiple narratives and stories gives insight into the phenomenon by which the researcher aims to ascertain the conjectural characteristics of the causation, enlightening the psychological processes with meaning (Dey 2007).

In the presentation of each category from the perspective of participants' narrative, data excerpts have been presented in quotes to support the identification of each category. The age and gender and place of diagnosis follow each participant's quote to provide readers with contextual information allowing readers to make their own inference from the information provided.

5.3.1 Organisation of theoretical categories

The findings of this thesis are presented in the order at which these categories emerged from participants narrations. The three categories that emerged from this study include *striving to adapt*, *finding out* and *living with it*. The findings are presented as participants discussed what is more concerning and affecting their T2DM management. When participants discussed their experiences of living with T2DM, their narrations focus initially on the challenges their experience and their efforts in meeting these challenges as living in the UK. The discussion was then expanded to explore their experiences of living in WA before migration to the UK. The conversation then focuses on how they found out about T2DM for diagnosed WA. For those diagnosed in the UK, they still discussed and reference their lifestyle experiences of living in WA. This aspect of their experience was drawn upon as reflections of their journey to living with T2DM. Following these reflections, the conversations for most participants were then directed towards how they have now found living in the UK with their condition. It was in this aspect that narrations on ways and strategies that have been adapted to living with T2DM were explored.

Although, it might be expected to present the findings in this study as the events occurred in the lives of participants. This would have meant presenting the emerging categories as finding out, striving to adapt and living with it. However, due to the nature of this study as a CGT research, the categories needed to be organised in the order at which they emerged from the narrations of participants. Besides, it was important in this study that the experiences of participants are presented as impactful as possible on their management process. Hence, the categories are organised as *striving to adapt, finding out and living with it* in this order. These categories are further discussed in the sections below.

5.4 Challenges in Managing Type 2 Diabetes Mellitus in the UK

This section presents the findings of the study in relation to issues associated with challenges and dealing with changes in the management of T2DM in the UK. It illustrates the management of T2DM as a challenging process that requires *striving to adapt* to the changes experienced.

5.4.1 Theoretical Category: *Striving to Adapt*

The first category that emerged in this study was *striving to adapt*. Participants discussed their challenges and efforts to change their habits to improve their health. Majorly, different aspects of striving to achieve healthy living were discussed in relation to the management of T2DM, which included changing diet, physical activity habits, beliefs, and support systems. Participants referred to striving in their health as something that they have not attained.

According to the Cambridge dictionary, strive is defined as to try very hard to do something or to make something happen, especially for a long time or against difficulties (Cambridge dictionary 2019). Oxford dictionary also defined this as to make great efforts to achieve or obtain something (Oxford dictionary 2019). The findings from the analysis of participants' narrations referenced to the challenges that they encounter after migration to the UK. Participants recounted their management of T2DM in the UK as challenging mainly due to changes that were experienced which differ from their prior experiences in WA. Now I go further to explore the data concerning the diverse ways in which they strive to adapt to T2DM management in the UK.

“The stress is not easy o, crazy something is that the changes that I have to deal with are not the same” (Gambo 42 years, male diagnosed in the UK)

And:

“We know things will not be the same as we used to have, the challenge is how to adapt to these changes. As you know, some of the things are easier while others are difficult for us...” (Orisa 52 years, male diagnosed in WA).

Striving to adapt emerged as a category that helped to define the different changes that participants experience in living with T2DM in the UK. The differences in the management processes were highlighted in this category. Understanding the changes that participants discuss in relation to their T2DM goes beyond issues that they face in managing their T2DM. It also relates to the comparison of what they know as acceptable, normal and familiar. This highlights that noting a change requires a comparison with another experience of similar events. The use of their lived experiences in WA as a reference point highlights the differences in the lifestyle of living in the two regions of the world. The changes that are noted in the narration of participants can be issues experienced based on the lifestyle prior to migration. The changes seem to take them away from what is known to be normal. These experiences will be important in understanding what normal is to them and how these can be used to support them in managing their condition. This study will delve further into the meaning of normal and how this contributes to managing T2DM condition in the UK.

Memo 5-1 Components of Striving

Memo 5.1 highlights the discussions of participants on the changes that are experienced as a result of managing T2DM after migration. They gave accounts of their efforts in achieving the recommended healthy living since being diagnosed with T2DM. How they have worked on changing some of the contributing factors in their life to help them in the management process. Two main changes emerged as efforts in changing dietary habits and increasing physical activity in their daily life.

The changing dietary habits experienced influence their decisions on food choices, and the impact on managing T2DM. Participants discussed how they had to make efforts on changing their dietary habits after diagnosis. This was a particularly important aspect of T2DM management as a result of the influence of self-management in the process.

“I was advised to stop eating so many of the food stuffs that I was used to eating you see, as we were told they had too much starch” (Ken 48 years, male diagnosed in WA).

Different aspects of changing influence dietary habits; sugar content was a very important aspect of eating healthily for all participants interviewed. Sugar content especially avoiding refined sugar was frequently referred to in their discussions on healthy eating.

“Ummm... obviously refined sugars are no go area but sugars that u,mmm... sugars that are absorbed very slowly into the body like starches... starch based foods are to be preferred to others while others that yield sugar content readily like grapes should be avoided” (Konge 45 years, male diagnosed in WA).

Interestingly, most participants mentioned how they try to avoid sugar in their diet since being diagnosed but also talked about not having to deny their body foods that contain sugar like chocolate and biscuits. This was also noted in the diary and food timetables that were offered to me during the data collection (see Table 3.4). This might be an environmental influence as it was discussed they have limited access to sugary foods when living in WA.

“I wasn't particularly, i didn't have a sweet tooth as such like cakes and chocolates and all that even before the diagnosis of diabetes” (Bobaro 57 years, male diagnosed in the UK).

But went on:

I still remember her (wife) teasing me about leaving the bars of maltesers. You know maltesers the chocolate and ummm...Toblerone and these other small balls... and stuffs... I had you know I had packages with stuff...you know my room... I was given accommodation at the hospital and she will come and visit and you know.....(laughing)...pack of maltesers will be there...ummm.. u know I wasn't eating so much chocolate...ummm.. you know there was ummm....I mean I would eat you know but I didn't make it particular....(Bobaro 57 old years, male diagnosed in the UK).

Another participant discussed not having sweet tooth, this is important, as participants seem to identify unhealthy diets with refined sugar content. This is essential to this study as dietary management of T2DM goes beyond the avoidance of sugar in food.

"I wasn't obese, I wasn't sweet tooth or taking sugar as much but there is a time in my life" (Bamba 65 years, female diagnosed in the UK).

Also went on:

"I am somebody who love chocolate and things like that and am conscious of having and being a healthy eater. Like any other person, to avoid sugar, too much salt and you can do everything and everything. I don't deny even the chocolate, I don't deny my body" (Bamba 65 years, female diagnosed in the UK).

In their efforts to continue *striving to adapt*, they start to pay attention to the food they eat since being diagnosed. However, the attention seems to change with their change of environment from WA to the UK. In WA, their attention is mainly concerned with avoiding refined sugar while little or no attention is paid to natural sugar contents in foods. For example, one participant discussed how they were advised to avoid sugar, but they still had diets high in carbohydrate.

"I know I try to reduce my sugar intake, but I used to eat bread in the morning, not brown bread but white bread, sometimes rice for lunch which is also rich in carbs, in the evening pap and sometimes pap in the morning" (Junde 82 years, male diagnosed in the UK).

And:

“My diet consisted of rich carbs, overwhelming the body but as you know this is what I have always known, it does not help that I do not get to move about here as I used to in my country” (Gambo 42 years, male diagnosed in WA).

On the other hand, different concerns and attention were placed on food after moving to the UK. This is more concerned with refined sugar content in food.

“There were specific aspects of shopping that I found interesting... cos umm... it meant changes to approaches to grocery shopping... yes so I would pay a lot of attention to packages and nutritional information and ummm... it was quite an eye opener finding out how much sugar is in stuff...that was a valuable experience I had” (Bolula 48 years, female diagnosed in WA).

And:

Yes ummm...just a simple illustration, coming from Nigeria ...west African... we have sugar only in teas and coffees but not in anything else...okay so I arrive in the UK and there is sugar in everything else expect in tea (Nimbabo 49 years, male diagnosed in the UK).

Following the discussion of food content, another aspect of *striving to adapt* is understanding moderation. Having to understand moderation is an issue that was also well discussed among the participants. It is particularly of importance in relation to dietary portions. Most participants talked about having recommendations to reduce their food portion. This has been challenging as they reported being familiar with having large food portion. Understanding moderation in healthy eating is more challenging and harder to meet management recommendations.

You know how we like our food.... I have large food portion unlike this small thing that they eat here... it just cannot be enough for me, that is really frustrating (Mange 57 years, male diagnosed in the UK).

And:

“I used to try my best but when I have to eat all the vegetables to get full as they all turn to water as far as I am concerned...what more can you do? This don't fill me up like my eba and fufu ¹does” (Kinjile 72 years, male diagnosed in WA).

There seems to be less attention about dietary moderation among participants recruited within community settings when compared with those from support groups.

“I eat when am hungry for food, the issue is that I have big appetite and so their small food sizes cannot be enough for an African man like me. I have to focus on me when am hungry is the thing” (Mange 57 years, male diagnosed in the UK)

In general, participants seem to have challenges with staying within the dietary portion recommendations as discussed in their narration. This might be as a perception that Africans require bigger portion sizes than White people. In addition, there seems to be less effort from participants that were recruited within community settings to meet these recommendations.

In addition to preparation difficulty, inadequate time, unfamiliarity with food type, cost of healthy food ingredients and the difficulty of not having familiar food types were also identified as contributing to struggling with healthy living. The discussion of expense was particularly reported among individuals that are below retirement age. This means they are either employed or unemployed but within employment age. Gambo (42 years) who was diagnosed in the WA and is an employed individual living with T2DM is a typical example of challenges these individuals face in affordability of healthy dietary ingredients.

“Yes, it is because when I switched to the healthy food, anytime I go for shopping, I spend a lot of money and am like ohh... is it because it is not Nigerian food. At times that I used to buy a lot of Nigerian food and like that but when it comes to like all this healthy food, even small portion is a lot of money” (Gambo 42 years, male diagnosed in WA).

Beyond the cost of eating healthy to meet dietary recommendations, getting support with food was an essential aspect of striving to adapt among participants. Male

¹Eba and fufu are popular West African diets derived from cassava tuber. Cassava is a root tuber plant that is rich in important nutrients and starch and so may have health benefits when consumed in moderation.

participants particularly discussed how they require help to prepare healthy meals from close family members such as partners and close female friends. This helps them to stay on healthier dietary habits.

“And ummm... my wife who is not also very well herself...ummm... we have basically continued the pattern even now ...so many years after she make special effort to make sure that I have my meals even at time when...ummm I because of laxity and other constraints I will struggle to do it myself and she has tried to make extra effort to make sure that I eat and so that have been... she has been monitoring and just keeping an eye on what I eat” (Zurisa 69 years, male diagnosed in the UK).

And:

“I have got someone to help me but she kinda like white food... she is a Nigerian ... a friend of mine but she doesn't even know anything about Nigeria... she hasn't been there so she helps me a lot in healthy eating before I even detect that I have got type 2... so am good in eating healthy food ... so when I got to know that I have to be checking out what am taking and all that... so she helps me a little bit more” (Dee 33 years, male diagnosed in the UK).

In addition to the dietary challenges in striving to adapt as presented above, participants discuss the challenges of meeting physical activity recommendations in the UK. All participants interviewed in the study acknowledge the need to increase their physical activity level. Physical activity level was discussed to have reduced significantly since moving to the UK.

“The kind of life we live here is just difficult to meet those exercise that my doctors ask me to always get, you know? I mean I go to work which helps a bit, but this place just seems to have made everything within my reach o... I hardly need to walk or do any major work is the issue here” (Josera 42 years, male diagnosed in WA).

Some other participants highlighted comorbidity as the reason for their reduced physical activity. This made increasing their physical activity level as recommended by healthcare personnel to be very difficult to achieve as they make efforts to meet up with the recommendations. The impact of socioeconomic status of these individuals also affects their physical activity commitment. This is similar to the impact on cost of healthy diets as reported in *striving to adapt*.

“Well sadly I cannot afford gym but there was a time when just getting by a day was a problem but I a lot of time I just resting lying down but after sometimes I started walking short distances by increasing you know that walk until you know I could go round the block...you know sometimes it will take me 15 to 20mins when I started initially when I started to rest as I walked long course...u know...heart... effect of my illness and my heart in ummm....” (Bobaro 57 years, male diagnosed in the UK).

And:

“Well... I can't even walk as I have arthritis, I have knee replacement surgeries, so mobility is one of my biggest problems. I would love to walk but ehmm... I struggle to walk but from time to time when I can... once a week or two or if I can at all... I go to the gym to use the treadmill, because at least I can hold on to something because I have mobility issue as well as diabetes. You know bad arthritis, so that is all I do. I don't do anything...” (Mam 64 years, female diagnosed in the UK).

While in the narration of others, it was highlighted that the environmental influence in achieving daily tasks easily has contributed to their reduced level of physical activity.

“Physical activity? This is not really something I get involved in now it has been all too difficult to get enough exercise since I came here even before I got my diabetes. I think it has to do with the values attached to going to the gym among us as Africans. I cannot just be going to gym or running as exercise, it is not part of me” (Wemi 56 years, female diagnosed in the UK).

Following the discussions with participants concerning the need to improve their level of physical activity, there were questions that need to be explored in terms of explaining this aspect of the *striving to adapt* category.

Improving physical activity highlights the need for increase physical activity among participants. The assumptions from participants excerpts such as “*affording gym*” and “*going to the gym*” show that participants mainly relate physical activity to the gym in the UK. This, therefore, contributes to the reduced physical activity level reported among this population. WAs have experienced a change in the environment which has contributed to their level of physical activity. Assumptions that physical activity in the UK is mainly achievable through the gym make it difficult to improve their level of physical activity. This assumption might be because of their new environmental influence, the widespread of gyms and their use might contribute to this assumption. The need to understand that improving physical activity level can be achieved through different approaches such as walks around the community, carrying out daily tasks around the house can amend such assumptions. However, the environment seems to make this difficult due to the automation of daily activities in the UK. Meanings of physical activity seem to be related to leisure. This is seen as something done for fun and not an essential aspect of managing T2DM. This concept will be valuable to understanding the challenges meeting physical activity recommendations among this population.

Memo 5-2 What is Physical Activity?

Memo 5.2 highlights the challenges of living with T2DM among participants in this study; there was a need to explore the aspects of striving that contribute to the challenges faced. The belief associated with T2DM as a disease is an important factor that contributes to their striving to healthy living. Environmental change majorly influences beliefs concerning T2DM among participants interviewed. Most of them have good knowledge of their T2DM, because of living with the disease and living in the UK. However, they are also influenced by their beliefs concerning T2DM prior to migration. Most participants talked about sugar as a major cause of T2DM, not being obese on being diagnosed with T2DM. The beliefs concerning their T2DM influence the management of the disease, mainly with respect to striving to adapt and maintain healthy eating habits

“As far as I am concern the main thing is to avoid sugar at all cost and you should be fine and not have diabetes. The issue is us coming to live like these white people by leaving our own traditional food which our body is used to... that is why we are having this kind of diseases in the first place” (Bobaro 57 years, male diagnosed in the UK).

The impact of belief was noted in finding alternative treatments. This is particularly among those that were interviewed within community settings; they highlight some of the treatments they engaged in to manage their condition. They believe some of these herbs can cure their T2DM, while the cost of medication in Africa was also another reason for the use of alternative medication. Although participants mentioned herbal medication use after moving to the UK, it was mainly in relation to when they have complications especially after many years of living with T2DM.

“I had a stroke once as a result of complications from my diabetes I was told... there is no help that they give you in hospital. Curing the stroke was entirely up to my own efforts. I was fortunate to be in Africa then, you know we have herbs. I was given herbs which I will rub on my right side and sneeze like snuff and sneeze my head off which they say activate my blood circulation” (Egbede 64 years, male diagnosed in the UK).

Finding alternative treatment for their T2DM or complications that arise from the condition is seen as the impact of their belief in these alternative treatments. Hoping

for a cure for T2DM or the complications of T2DM enhances the use of alternative treatment for this population. Majority of the participants expressed the hope that a cure for T2DM is found as this is what really interests them. They mention having a cure can take away their burden of living with the disease. This contributes to their using of alternative medications like herbs that were claimed to cure T2DM.

“I was in a desperate state at this point and was willing to do anything to cure my diabetes. I drank my own urine, drank ewuro, ate onions and garlic but no cure” (Yeriyaya 77 years, male diagnosed in WA).

And:

“In Africa, we were told to eat bitter food as they help cure or at least reduce the blood sugar, so I used to eat aloe vera, ewuro² and green igba³” (Bolula 48 years, female diagnosed in WA).

And:

“Kalala leaf is one that we used as well in the effort to find cure for my condition” (Kilanla 45 years, female diagnosed in WA).

And:

“I used to go visit Alagbo while in Nigeria, they mix up different concoctions of herbs and other things to cure the diabetes but unfortunately nothing worked before I moved to the UK” (Vero 55 years, female diagnosed in WA).

A memo was written to understand the impact of hope and belief in the management of T2DM.

² **bitter leaf** (*Vernonia amygdalina*)

³ **Garden egg**

Hoping for a cure among participants seems to have both positive and negative element in *striving to adapt*. The hope for curing their T2DM results in the use of alternative medicine for most of these people. Having remission is mainly the reason for the use of alternative medicines as they are advocated as a cure for T2DM. Hope goes beyond the expectations for the cure of T2DM for these participants. Hope is a formidable force in the management process to keep them going on the journey of living with T2DM. Better outcome of managing T2DM influences the hope of living optimally. The better the management outcomes for these individuals, the more hope that fills them to push further in the effort to optimally manage their T2DM. Hope acts as an essential ingredient in the management, which can be directed in the right direction to further the progress of managing T2DM. Losing hope negatively affect management progress. Losing hope can lead to surrendering to poor outcomes of living with T2DM. This can further contribute to reduced efforts in the management of their T2DM. Working on directing the hope of these PLWDM to optimal T2DM management will support patients with energy to keep striving in managing their T2DM. It then means that hope directed to the right direction is an essential aspect of managing T2DM for people in this population. Taking this to the higher level of conceptualisation will, mean that establishing honesty in what can be achieved in the management of T2DM is of high importance. The goals and aspiration of participants in the management process are essential and needs further exploration.

Memo 5-3 Impact of Hope

Following the analysis of hoping for a cure among participants (Memo 5.3), there was a discussion concerning their use of alternative treatment. This practice was mainly described concerning managing T2DM in West Africa, as there was less mention of using alternative treatments in the UK. The use of alternative medicine highlighted the impact of hope in the management of T2DM. The belief and hope connect actions and goal-setting of participants to the management of T2DM. Supporting WAIs in establishing the goals and possibility of what can be achieved will contribute immensely in efforts to strive and adapting to healthy living as required in the management of T2DM (Alloh et al. 2019b). This is because goal setting has been described as important in directing attention and mobilising efforts and motivating strategies to achieving desired outcomes (Bailey 2017; Cullen et al. 2001).

After the exploration of the *striving to adapt* category in this analysis, there was a need to go beyond current management experiences of participants. In the discussion of participants, they regularly referred to their experiences prior to diagnosis with T2DM. The next category presented in this analysis focuses on exploring the experiences of participants prior to diagnosis and the impact of these experiences on the management of T2DM in the UK.

5.4.2 Theoretical Category: *Finding Out*

This theoretical category was identified as '*finding out*' which represents the process of being diagnosed with T2DM. These processes influenced the management regime of each participant, future management that in turn influenced the ways blood glucose is controlled. Participants described how they found out about their T2DM and the impact of *finding out* on recommended T2DM management regimes by healthcare practitioners.

The process of *finding out* mainly began with the noticing of T2DM symptoms. This process outlines the points at which participants realised something was not right about their health. The symptoms included urinating frequently, fatigue, feeling thirst and weight loss, mouth and body ulcers. The noticing of symptoms gives specific reasons why participants felt something was not right about their health and needed to seek explanations. All but four participants expressed noticing at least one form of symptoms, which made them seek medical attention prior to *finding out*.

"I found out...the way it started I was feeling weak, dizzy and dry mouth, dry lip when I shouldn't. I was fulling my mouth with everything I could but it's not helping". (Bamba, 65 years, female diagnosed in the UK).

And:

"I noticed a symptom of diabetes which is frequency of urination and on consultation of my doctors, I asked that I was having to drink a lot and a lot urinate frequently and they agreed to start the process of diagnosis of diabetes" (Bobaro, 57 years, male diagnosed in the UK).

And:

We used to sleep with water in the room, my brother, my siblings and me, we wake up in the middle of the night to drink, water on our bedpost to drink water, plenty of water. Not knowing what was making us drink, those are symptoms of diabetes (Ken 48 years, male diagnosed in WA).

The data indicate two ways in which participants know about their T2DM status: Noticing symptoms was one and most common way in which people find out about their T2DM while routine checks was another way of finding out about their T2DM. I think finding out is a significant category that explains the beginning of peoples' T2DM journey. What is interesting is how people continue to live with the symptoms without much concern to seek medical attention for it. This seems to correlate mainly with the environment where the individual live. People living in WA at the start of noticing symptom seem to delay until symptom worsen or when daily life is being affected as a result. Another contributing factor to seeking explanations for T2DM diagnosis is the influence of others such as family, friends' insistence to seek medical explanations. While for others it was as a result of work-related requirements for T2DM testing. On the other hand, people in the UK during diagnosis either notice symptom and seek medical attention immediately afterwards or found out about their T2DM during routine checks. This gives me the impression that environmental influence how people find out about their T2DM. Mainly it seems the ease of accessing healthcare service influences the stage at which T2DM is diagnosed which then contribute to the management regime recommended by healthcare providers. Further exploration is needed in terms of how 'finding out' contribute to the management of T2DM which will benefit this study.

Interestingly, noticing symptoms was not reason enough for some people to seek explanations. Memo 5.4: Noticing symptom highlights other reasons like “getting worse”, “family insistence” all contributed to seeking explanations for symptoms noticed which all leads to a conceptual category of “*finding out*”. This suggests that participants have little or no interaction with healthcare facilities to influence early diagnosis in WA. Within this study, most participants interviewed were diagnosed with T2DM in WA. This insight was useful as it shows that people may not have favourable experiences with healthcare or there was limited access, which makes leaving symptoms to get worse and delay diagnosis.

The participants discussed what instigated them to notice that something was not right about their health was the frequency at which the symptoms occurred. It became apparent that people in this study not only notice symptoms but there was also an increase in symptoms occurrence that instigates the need to seek medical attention. In taking this further, the frequency of symptom became even more significant when it interferes with people’s daily life, as they knew it. The analysis, therefore, recognises a clear relationship between the frequency and symptom interference on daily activities, which informs seeking medical attention to symptom cause. A memo was written to develop the process with the concepts identified.

Frequency in noticing symptom was found to be an essential part of finding out. The process of noticing symptoms that most participants recounted was only followed through after there is a continued increase in the frequency at which these symptoms were noticed. Although frequency is subjective to each person before deciding to seek medical explanations for the symptoms, it appears that there are several factors that contribute to seeking medical attention after increasing frequency of symptoms. The intensity, availability and personal experiences of individuals with medical facilities influence their readiness to seek medical attention for their noticed symptoms of T2DM. It then, therefore, goes beyond the usual getting access to medical facilities in the UK. The prior experiences of individuals in terms of healthcare services determine their willingness or readiness to seek medical explanations for any noticed symptoms. The experiences of medical facilities form bases for judgement of healthcare facilities. This also accounts for the assumptions that people have towards these facilities. All these account for the willingness of people to engage with medical facilities for explanations for the noticed symptoms of T2DM. The easier the access of these medical facilities and more positive prior experiences of engagement with healthcare facilities will influence early presentation for diagnosis.

Memo 5-5 Frequency Influence of Noticing Symptoms

Usually, urination, fatigue and thirst are normal feelings that the body uses to indicate the need for an increase or decrease of hydration and stress. However, increased symptoms of thirst and urination above normally indicated the need for medical intervention. Phrases like “frequent urination” “drink a lot”, “plenty of water” were used to describe the increasing symptoms noted. This shows that the main indicator that prompts people to seek medical attention for these symptoms is the frequency at which they occur. Insights from these narratives were significant and showed the reliance of people on the frequency of events occurring as the indicator to seek health explanation. These narratives show that T2DM diagnosis was an unexpected and unsuspected occurrence for most participants and only noted due to the frequency of occurrence of noticing symptoms. As comparative analysis continued, the frequency of noticing symptoms was identified as influencing seeking symptom cause as discussed later under the “*finding out*” category.

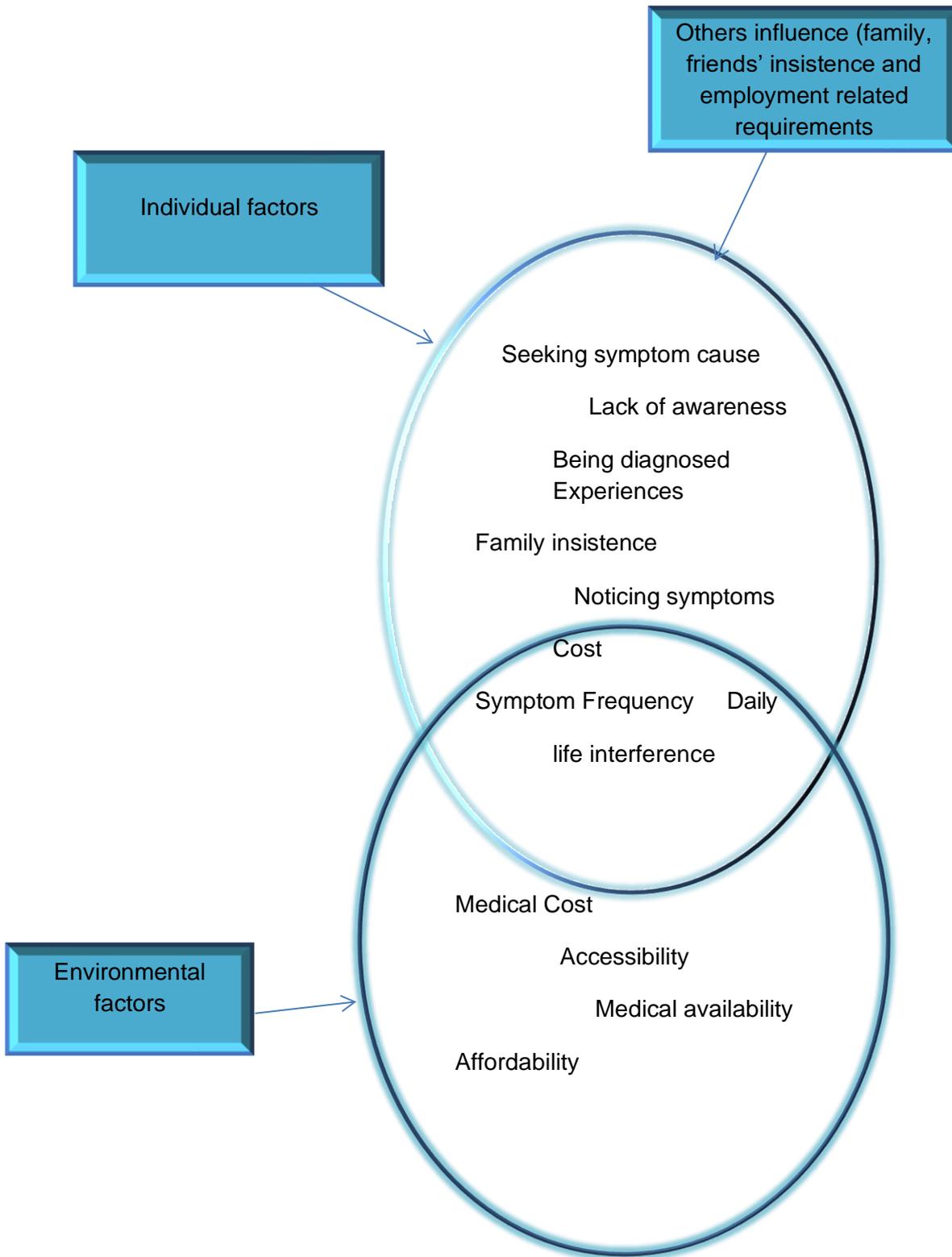


Figure 5-1 Contributing Factors to *Finding Out*

Figure 5.1 illustrates the process of “*finding out*” as developed from the codes in the transcripts, showing the relationship between individual factors and environmental influence on the “*finding out*” process. The upper circle shows codes that are related to individual factors in seeking medical attention to symptom cause while the lower shows the environmental influence that contributes to the finding out process. This lower circle shows some factors are out of the people’s control in seeking medical attention. The environment is actively involved in the process of finding out. This was very apparent in the stories of participants that found out about their T2DM status in relation to the location of diagnosis.



Figure 5-2 Controllable and Uncontrollable factors in finding out

As highlighted in Figure 5.2, *finding out* about T2DM was influenced by environment (location) of diagnosis. T2DM diagnosis in West Africa is significantly different from diagnosis in the UK. This is mainly due to the environmental influence. For participants that were diagnosed in West African settings, the diagnosis was delayed which affects the management of their condition.

Noticing symptom was found to affect the willingness to seek symptom cause among these participants. They recounted how their journey of seeking explanations for the cause of symptoms began due to noticing symptoms. However, the stage at which participants seek medical attention for the symptoms noticed differs. While some participants immediately went to the hospital for medical explanations for this experience, most participants tried home remedies to manage the symptoms noted which continued before deciding to seek medical help. Particularly ignorance and environmental influence contributed to the length of wait before seeking medical attention.

“But you know our culture, it was thought to be something else my sexual life was affected, tried with wife and girlfriend it was the same thing, so I concluded that there was something wrong, it began to sink in that I had diabetes. Because of that side effect it sank in that I had diabetes, I tried all African herbs that I could think of you know” (Konge, 45 years, male diagnosed in WA).

And:

“The way it started I was feeling weak, dizzy and dry mouth, dry lip when I shouldn’t. I was fulling my mouth with everything I could but it’s not helping” (Bamba, 65 years, female diagnosed in the UK).

Being unaware of the importance of early diagnosis among most of the participants contributed to the delayed diagnosis that was reported in this study. Participants that were diagnosed in WA with T2DM before migrating to the UK, discussed how being unaware contributed to their delay in seeking medical attention when symptoms were noticed. Most of them discussed how it was ascribed to different factors such as stress and waiting for things to return to normal.

“People living with diabetes don’t take care of themselves; they leave it till later stages. I was diagnosed in the UK from the beginning” (Mabisa, 69 years, female diagnosed in WA).

And:

“So my mum had diabetes, I used to have palpitations, but I didn’t know what they were each time I get angry or upset, it’s palpitations. So I think it also worked with my blood sugar, yes but I didn’t know I had blood sugar, I didn’t know” (Kenfa 52 years, male diagnosed in WA).

And:

“That is something that we never took as it would affect us because.... Ignorance is the biggest killer” (Dorima 37 years, male diagnosed in WA).

Others also discussed the mistaken symptoms as a result of other health challenges that they are currently treating.

“I noticed my symptom as went to the hospital, they found nothing and sent me back home in 1987, it was when I came to the UK in 1999 that I was diagnosed as having diabetes” (Junde 82 years, male diagnosed in the UK).

As the analysis progressed, it was obvious that finding out is greatly influenced by the environment. This highlights the need to go beyond individual factor in the *finding out* category. The environmental influence was discussed as contributing to seeking medical attention on causes of symptoms noticed. Participants living in WA at the time of noticing symptoms discussed how they delay seeking medical attention. This was attributed to several factors in the environment.

“As it is well known in Africa, our community is very close, everyone contributes to your business, so I had all family and friends that were contributing and influencing me” (Malisaya 44 years, male diagnosed in WA).

And:

“There is the issue of misdiagnosis or unknown condition in Africa, making it difficult to properly treat. Lack of knowledge about diabetes also contributes to the issue. I

would say there is better management of diabetes in the UK than Africa” (Mubisa 69 years old, female diagnosed in WA).

Participants discussed how the availability of medical facilities in the environment they lived in WA affected their accessing it for seeking medical advice. This they mentioned that not having medical facility easily accessible and available made it difficult to seek medical attention when they noticed some T2DM symptoms.

“Well, I was in my country (Nigeria) when I was diagnosed with diabetes. I was feeling very tired and thirsty initially I thought it was the stress that I was going through, so I did not do much about it. It later became apparent that something was not right with my health. This was when my wife insisted I go to the hospital. I went to a private hospital because it is easier and faster to see the doctor there. It was there that I was asked to run some test and was then diagnosed with diabetes” (Orisa 53 years, male diagnosed in WA).

As analysis progressed, the affordability of healthcare services become important to the finding out category. The cost of accessing health services in Africa was part of the reasons for the delay in presenting health condition to medical professionals among participants that were diagnosed with T2DM in Africa. They discussed how they have to pay for their medical costs and so will only go to medical facilities if symptoms get bad and as a last resort, while participants that were diagnosed in the UK did not mention cost as a factor and so presented for medical attention when symptom was noticed.

“I felt I might need to see a doctor for these symptoms, but I had to get some money to register at the private hospital. So am not sure exactly how long but it took a while to go anyway, with my wife’s insisting I go when she got worried of my symptoms. Going to general is not pleasant experience was why I waited to go to private” (Kenfa 52 years, male diagnosed in WA).

And:

“Well... we don’t really have the opportunity to check our sugar level on routine checks... it cost money to do that so we only check when we notice symptoms” (Kelora 57 years old, male diagnosed in WA).

Prejudgement about health, in general, was influential in seeking medical attention for symptoms noticed in T2DM diagnosis. Environmental beliefs were discussed to contribute to their presentation of symptoms at medical facilities. In most cases, there is a belief that other factors might be the reason for the symptoms noticed.

“But you know our culture, it was thought to be something else, someone has bewitched me so I concluded that something was wrong” (Orisa 52 years, male diagnosed in WA).

And:

“There is the issue of misdiagnosis or unknown condition in Africa, making it difficult to properly treat. Lack of knowledge about diabetes also contributes to the issue” (Yaranto 67 years old, female diagnosed in WA).

Going further into the finding out brings the analysis to participants getting a diagnosis. Being diagnosed with T2DM was a very important point that was highlighted among all participants interviewed. It was discussed as a turning point in their life and marks the beginning of living with T2DM for them, which was a new chapter. Participants relate the phase of being diagnosed clearly and vividly which made it seem like a fresh occurrence. The impact of being diagnosed with T2DM will stay with them for the rest of their lives. Many did not know that they had T2DM prior to diagnosis but after diagnosis, it becomes a central aspect of daily life routine. This has led to different feelings after diagnosis that is explained below.

“Well... being diagnosed with diabetes was one of the worst news I have received ever... it was disappointing and really worrisome. I was so shocked especially because of the limited knowledge we have in Africa concerning the disease” (Kelora 57 years old, male diagnosed in WA).

And:

“It was just not something I suspected even when I was not feeling well, diabetes was beyond strange for me until I was diagnosed.... I was scared for my future, what will happen to me” (Wilo 63 years old, female diagnosed in WA).

Most of the participants in this study discussed the feelings that they went through after being diagnosed with T2DM. Mainly the first emotion was being shocked at the discovery of having T2DM due to it being unexpected. While two participants talked about suspecting T2DM when some symptoms were noticed, it still came as a huge shock to confirm that T2DM was the reason for the symptoms they noticed.

“However, the sudden shock passed and I started to think of how I can logically live with the disease and still be as normal as possible. Anyway.... It has been by God’s grace so far since then we have been able to give thanks to God on the journey” (Willo 63 years old, female diagnosed in WA).

After the shock of being diagnosed with T2DM, panic at the realisation that they will be living with T2DM for the rest of their life set in as another emotion that was well discussed among most participants. The panic feeling has been discussed to influence the management regime of T2DM that people commence when diagnosed. One participant discussed how initial panic of finding out about her T2DM made her buy all meals labelled as T2DM food. She also talked about not enjoying these foods, but her panic state made her consider so many other options in effort to manage her T2DM. She described feeling it as a death sentence when informed of having T2DM. She went further to mention how vulnerable this feeling made her and how she was ready to use any medication, herbs and other items people suggest to her.

“I have always been health conscious, the very first time they said I am diabetic. In any situation, you panic, in my panic I was going round looking for diabetic meals and I actually picked some few things that said it’s diabetic meal. I prepared it and it was horrible, I couldn’t take It” (Yaranto 67 years old, female diagnosed in WA).

Panic and the extra burden of being diagnosed with T2DM was another feeling that participants had after diagnosis. Most participants felt that having the diagnosis has placed an extra burden of health challenges on them. This is particularly because most have other health conditions that are being managed. Feeling panic is mainly towards the burden of managing the condition. In addition, the fear of complications and dying earlier than hoped put people in the state of panic. The feeling of panic also contributes to what people are willing to do to management or even look for a cure for their T2DM condition.

“You know I have arthritis and so I cannot walk properly, having diabetes scared me so much. I just feel my issues have double now” (Orisa 52 years old, male diagnosed in WA).

And:

“I have to tell you, I have heart issues that am already managing, to then be diagnosed with diabetes just makes me feel my heart will be overwhelmed with these issues, it will not be able to manage as long as it should” (Bobaro 57 years old, male diagnosed in the UK).

A memo was written to assist in conceptualising the emotions of participants in the diagnosis with T2DM.

In my discussions with Wilo, Orisa and Bobaro, they all had similar feelings to being diagnosed with T2DM. They experienced shock, panic and fear. There was the expression of fear of leaving what is known behind to start on a new path that is defined by T2DM management. Uncertainty emerged as a key feature of 'finding out'. It became apparent that people's emotion after finding out move from shock, panic which is mainly because of uncertainty. Although the role of uncertainty remains ambiguous, it was noted in further discussions.

This was explained by participant Willo, who discussed how not knowing what to expect after finding out led to panic buying, she was not sure of what will come after her diagnosis. "I was scared you know, being diagnosed with this condition". "I had no idea what will happen with my life now, how will I be able to manage". My initial thought about uncertainty in people's recount of finding out was that they feel fear, shock and panic experienced after diagnosis due to uncertainty. However, this does not explain the persistence of uncertainty even when they are no longer in shock or fear of living with T2DM. Getting to know what it entails to live with T2DM makes these initial emotions to subside reasonably. People become better informed with T2DM, from education, experiences and knowing what to do to reduce the uncertainty of the future which takes away the fear, shock and panic experienced. However, uncertainty is a continuous aspect of living with T2DM.

Memo 5.6 explored the discussion of participants on being diagnosed with T2DM. Following the analysis, it was noted that uncertainty concerning the future is mainly what causes panic and fear among participants. This took the analysis to a higher conceptualisation, which helped in understanding the emotions expressed in being diagnosed with T2DM. It will be beneficial to support individuals diagnosed with T2DM through this phase of the T2DM journey. The decisions made in the early phase of being diagnosed seem to affect the management of the condition as time goes on. This highlights the importance of the initial phase in the management process.

Being diagnosed contributed to the management regime that participants are recommended to stick with to control their T2DM. For participants diagnosed in Africa, all the participants were placed on medication to manage their T2DM immediately after diagnosis. This is in addition to lifestyle recommendations to help control their blood glucose level.

“They said yes I have got diabetes Type 2 and on that same day they put me on metformin. And I have been on metformin ever since from that day on” (Yaranto 67 years old, female diagnosed in WA).

And:

“I was diagnosed by chance as I was made to do general test before retirement, I only noticed I had grown lean but nothing alarming before then. I was immediately placed on medications because of the late stage of my condition” (Yerityaya 77 years old, male diagnosed in WA).

On the other hand, many of the participants diagnosed with T2DM in the UK were recommended lifestyle management only without being placed on medication. One participant is currently still on lifestyle management of T2DM without being placed on any medication. One participant discussed how he lived with his T2DM for more than 10 years on lifestyle management before being placed on a first line T2DM control drug about four years ago. Differences in T2DM management recommendations that are noted among participants diagnosed in Africa and in the UK are mainly due to the stage of their T2DM when they were diagnosed.

“I don’t know if you have a.... I don’t know what stage you are in your question but I was able to manage ummm... without...taking any tablet (Metformin) for 10yrs ...I started taking tablet in 2013 less than 4 yrs. ago so and ummm....it has been relatively good control of the diabetes” (Bobaro 57 years old, male diagnosed in the UK).

Furthermore, this is mainly due to the ease of accessing medical attention in this location, which is particularly of importance in the management of T2DM. In the UK, easy accessibility of medical facilities by the population allowed most participants diagnosed in the UK to seek medical attention almost immediately symptom was noticed. For example, four participants were diagnosed with T2DM on routine checks before even noticing symptoms.

“One thing about me...I am very concerned about my health, so I go on to check a lot ... do you understand? So, I just go there to do general test.my blood and all general. So, I was like okay do this for me... as my mum got it so let me know if am close or so. So after doing that for like... after sometime they sent me a letter, that I have to go and do further test or something like that and then that I had to go to a group and start going for lectures so I can prevent”...(Dee 33 years old, male diagnosed in the UK).

After the analysis of participants relating how finding out about T2DM contributed to their management process, a memo was written to explore aspects of *finding out* and how this category affects the management process.

This is the process of getting to know the T2DM status by participants. Participants indicated the process of knowing their T2DM status, the “knowing” which changes everything from then on. Participants get to find out about their T2DM status as an effect of noticing symptoms, which is gauged as a result of the frequency of the symptom. In addition, the interference of the noticed symptoms on daily life instigates the process of seeking symptom cause. Frequency forms the backbone for finding out about T2DM status. It appears that noticing symptom influences seeking cause due to the frequency and interference of daily living activities.

In looking at the finding out category, my initial look at this category was mainly focused on individual influences, which are mainly based on the person’s behaviour and efforts to seek cause of symptoms. However, beyond the individual factors, environmental interaction and influence were also found to be important in the *finding out* process. This really stood out when I was able to expand my view of the situation, especially when comparing finding out among participants diagnosed in the UK and in WA. The importance of the interaction between individual efforts and environment became significant in understanding the dynamics of finding out as a category. There is a need to further explore this interaction on how it contributes to T2DM diagnosis and management afterwards.

Memo 5-7 The Knowing

Memo 5.7 discussed my initial line of thought as I walked my way through the analysis of the data from participants. There was a need to conceptualise beyond these factors to a higher conceptualising level. Higher-level concepts allow for highlighting commonalities in the various scenarios, in events described by participants while also determining the theoretical fit and usefulness between overlapping concepts (Glaser and Holton 2004). It became apparent that people's ability to find out about their T2DM condition is not only determined by their efforts to seek the cause of symptoms. Beyond this are the influence of environmental factors, which provide the opportunity to access, and the availability of medical help in finding out about their T2DM.

In conclusion, *finding out* category is affected by different factors and how these interact to affect T2DM management process among WAIs in the UK. In terms of interaction between these contributing factors, individual factors are less pronounced and influential among people that were diagnosed with T2DM in West Africa. Barriers to finding out were more dependent on environmental factors as discussed by participants. Individual factors were less impactful in the process of being diagnosed in WA (see Figure 5.2). This means that individuals' choice on the finding out process about their T2DM was limited due to unavailability and accessibility of health care facilities in this environment. This was discussed as mainly due to limited access to good healthcare services. Environmental availability and accessibility of healthcare services were major contributors to *finding out*.

On the other hand, people that were diagnosed in the UK place emphasis on the influence of individual factors on finding out about T2DM. This is more prominent and influential than environmental factors in the process of finding out in the UK. In this environment, there is better availability of medical services with easy access to these services. In this study, participants diagnosed in the UK responded to how challenges to access were more affected by individual factors such as busy with work, not placing importance on healthcare services. These barriers were individual factors that are mainly influenced by self-efforts to seek the cause of symptoms. The dynamics of how individual finding out plays an important role in the management of T2DM.

5.4.3 Category Three: *Living with it*

Living with it was another principal category that emerged from participants interviewed in this study. *Living with it* emerged as the final theoretical category from this study. The category is characterised by closely related properties that gave insight into how participants come to accept their living with T2DM. Accepting that T2DM is a permanent change that they have to live with, this calls for the need to adapt to the condition. People draw on various strategies that they have perfected over the years to live as normal as possible.

The process of *living with it* highlights the stage at which the struggles of *striving to adapt* have resulted in the acceptance of living with T2DM. Participants surrender to living with this condition, particularly after accepting that T2DM is a life-long condition. Throughout participants' account of managing their T2DM, they disclosed reasons why they have come to accept that their T2DM is a life-long condition, although they hope for a cure for the condition. This highlighted that WAIs may eventually 'surrender' to living with the condition. For the purpose of this thesis, surrendering was defined as the behaviour demonstrated by participants that shows how they have come to accept T2DM as a permanent component of their daily life.

"The way things are now, I know it is the way God wants it, I have to accept my destiny with this condition and just live as normal as possible. Nothing much I can do really" (Wemi 56 years old, female diagnosed in the UK).

And:

"Since I have had this my condition, I just have been living one day at a time, living with it is all I can do" (Josera 42 years old, male diagnosed in WA).

Labels such as "am living with it", "coping", "accepting it", "now that I have it" were used by participants indicating they have come to accept the changes in their life as permanent and have surrendered to the condition. As the comparison of patterns progressed, acceptance and finding balance to living with T2DM emerged. These participants have come to accept T2DM as a life-long condition. They explained how accepting this change has contributed to their organising their lifestyle and activities to accommodate the changes required for the better management of the condition.

“Am making it work actually, it may not be what I wanted to happen to me, but I have realised that letting myself know that it is a permanent condition helps me to accept it. I have learnt to get used to my management regime and see it as a normal way of living” (Gambo 42 years old, male diagnosed in WA).

And:

“Before I realised that it is a permanent condition I have to live with for now, I was desperately trying so many things that were not good for me and even neglecting my medication and all. But now I am in a better place with it, am still working on my management but it is better than it used to be” (Vero 55 years old, female diagnosed in WA).

On the other hand, some participants discussed how they realised the condition was a lifetime condition. This discovery seems to have negative impacts on their life, which they find difficult to accept. It was difficult to accept that the efforts of striving to adapt living will be a permanent change in their life. They discussed how they have returned to living normally and taking their medication when they needed to do so. This has resulted in poor management of the condition as they are still struggling to maintain the management regime recommended for their T2DM.

“I mean... well.. realising that not much I can do as my condition is permanent just makes me give in, after all we all will die from something. I mean look at my age of over 70years, my ancestors don't even live that long so why should I deprive myself. I take my medication as given but that is all I am willing to compromise, definitely not my diet” (Kinjile 72 years old, male diagnosed in WA).

And:

“Having this condition for so many years and knowing I will be having it for the rest of my life, I have just decided to live my days as I feel like. Who knows nothing may happen and if it does I know I will have the best hospital facility to care for me in this country unlike what I had in my home country” (Wilo 63 years old, female diagnosed in WA).

Through the process of *living with it*, participants adopt strategies to adjust and cope with living with T2DM. One of such strategy is avoiding disclosure of their condition to people. Disclosure of their condition is seen as very private and the information is only shared on the need to know basis. Avoiding disclosure of living with T2DM was a common practice for most participants that were interviewed. This practice was associated with sharing their T2DM status with some friends and community members. Participants cited cultural influence, avoiding discrimination/ stigmatising, need for socialising, needing to live normally, and avoiding being a burden are reasons for avoiding disclosure.

“It is an African thing you know, we do not easily disclose issues, it is seen as people with bad wishes can make it worse, something diabolical and stuff” (Balabi 78 years old, male diagnosed in WA).

The understanding from the analysis of this aspect of living with it is that people seem to avoid disclosure as a better way of managing T2DM. A memo was written to understand the impact of avoiding disclosure on the management of T2DM.

Avoiding disclosure was discussed in terms of how people talk about their T2DM. This was found to be an important aspect of managing T2DM within community settings. The impact of sharing their experiences of living with T2DM was noted in their management process and the support that is gotten from others in their management. My interaction with Bobaro (57 years, male diagnosed in the UK) clearly highlights this aspect of managing T2DM. In the discussion, he mentioned how “being open” plays a crucial role in support that people can get in managing T2DM from their friends and family in their community. This was further explored to find that people are less likely to speak about their health challenges. I then had to wonder what could influence the avoidance of disclosure of T2DM status.

Memo 5-8 Avoiding Disclosure

The avoidance of disclosure was based on the privacy of their condition; they seem to only disclose their health condition based on “Who needs to know”? The role that individuals play in the management process determines if they are considered for knowing about their T2DM status.

“Put me in to consideration, most people that know me that am diabetic now, but other people could be less open about mentioning their medical condition. I think it helps me to come out opening to let people am diabetic” (Bobaro 57 years, male diagnosed in the UK).

The influence of culture was cited as affecting avoiding disclosure among participants that discussed avoidance of disclosure. This is mainly because culturally they are expected to keep their challenges to themselves. It is known as a way to pull through challenges and “man up”. It was expressed that the culture sees it as a weakness to share one’s challenges with everyone. Particularly when it comes to health challenge, it is assumed that sharing such issues can make it worse.

In my experience... when you talk about diabetes especially to the Africans it’s like a taboo... they don’t want to talk about it. They hide it and ehmmm... I try to teach them it is not a taboo or something you caused. It is not a sin or anything (Lolily 63 years, female diagnosed in the UK).

And:

“We really don’t like to talk about it, it’s just in our culture to deal with whatever challenges life has thrown at you as that is what we do with our diabetes” (Bolula 48 years, female diagnosed in WA).

One major reason for avoiding disclosure was to avoid discrimination. Most participants also discussed how avoiding disclosure of their T2DM condition helps them avoid discrimination that can be experienced with living with T2DM. This they say is partly because traditionally T2DM is seen as a disease caused by excess consumption of sugar. In this explanation, people see T2DM as a disease condition caused by the individual living with it. It is therefore seen as a fault of the person living with it as they did not control their consumption of sugar.

“Well I have my circle of friends and telling them I have diabetes will make them treat me differently which I don’t want” (Zurisa 69 years, male diagnosed in the UK).

And:

“I will like to keep my issue to myself, telling them makes them look at you as if this is your fault, some don’t know diabetes can be hereditary, they just all think it is too much food and sugar, my mother had it, even my granny but anyway.... I will rather not tell than have them treat me different” (Sambila 75 years, male diagnosed in the UK).

And:

“The thing with living with diabetes is that I feel it is something private, I don’t want people to look at me with pity or even see it as my fault. I fear this might be the case sometimes so I will rather keep it to myself” (Mange 57 years, male diagnosed in the UK).

Some participants disclosed that the reason for avoiding disclosure was due to their needing to live a normal life, particularly to escape being reminded of their living with T2DM by people outside their close friends and family. They discussed that not disclosing their T2DM status makes them live normally among some friends and community members without being reminded of living with T2DM.

“I just feel like not sharing makes people treat me normally and helps me be normal about having it, so I just keep it in the background, seem like it just disappears like that” (Sisato 39 years, male diagnosed in WA).

Some participants discussed that not disclosing their T2DM status is because they want to remain responsible for their own health without becoming a burden to friends and family members that might be affected by their living with T2DM. They feel not disclosing their condition will help them keep their independence while avoiding being a burden to others.

“My parent at home can be a pain when it comes to this kind of issue, they will be worried about me which it shouldn’t be you see... so I keep it to myself as I don’t want to worry them in anyway” (Dorima 37 years, male diagnosed in WA).

And:

“I did not tell some of my friends as I just can’t handle being a burden to them, having them cook and look out for me as I live alone... so I just keep to myself and let them go on with their life” (Kelora 57 years, male diagnosed in WA).

Another strategy of *living with it* is knowing their body’s needs. Participants discuss having a good understanding of their body’s needs through years of experiences in living with T2DM. Knowing needs comes from experiences of living with T2DM, which they claim to have perfected over the years. This contributes to managing T2DM according to how participants feel their body needs. Some participants believe they can use this to inform their dietary, medication regime and sometimes this might contradict healthcare professionals’ recommendations. They use this experience to know when they can indulge in high sugar treats like chocolates and cake. In some instances, this was useful when they have low blood glucose (hypoglycaemia). This can be very handy in terms of knowing the body’s needs and acting accordingly to eating something to raise sugar level when needed. However, it can also be dangerous if an erroneous judgement is made concerning body need.

“With a certain level of moderation I am able to judge when it’s alright to take a biscuit or not but ummm... again I will say that I have not always been a good boy (Laughing)...” (Malisaya 44 years, male diagnosed in WA).

Following the analysis of this category, there was an aspect of living with it that came through with the assumption that the management of T2DM is a social process. Although participants mentioned understanding their body needs in relation to managing their condition, there were references to needing support of others in the management process. Participants discussed support in terms of medical support and social support.

Medical support was discussed among participants. This was described as an important factor in the management of their T2DM. Mainly, all participants discussed how advanced medical facilities and teams of healthcare professionals in UK hospitals have contributed to their better management of T2DM. Knowing that there are competent medical facilities and dedicated professionals to assist them with any

issues and emergencies that may come up during their daily life contributes to their preference of the UK healthcare system. All participants attested to the fact that medical delivery in the UK is more efficient than what is obtained in WA. This was particularly among participants that were diagnosed with T2DM in WA. It gives them a sense of security due to the ease of accessing healthcare when needed. Several differences were noted between healthcare delivery in the UK and back in WA. Accessing health care experiences are affected by Location, Waiting time, duration of consultation, the value of consultation, treatment and care.

In accessing healthcare facilities, participants discussed how location influences their use of healthcare services. Most participants explained how difficult it is to locate competent healthcare facilities in WA. Mainly standard healthcare facilities are situated in urban areas, which make it difficult to access. This particularly contributes to their not knowing about their T2DM status, which resulted in delay of being diagnosed. Participants explained the difficulty in accessing healthcare due to location issues contributes to why there are no routine checks for diseases like T2DM before it gets to later stages that are usually when they get diagnosed in Africa. This was mentioned to be different in the UK due to the ease of accessing healthcare services by booking appointments for a convenient date to consult with medical professionals. Four participants interviewed were diagnosed during routine medical checks with T2DM in the UK. This early diagnosis of the disease, they described having greatly contributed to helping them maintain their blood glucose level under control. Two of the participants were not placed on medications regime as they were recommended to manage their T2DM with lifestyle changes of healthy diet and increased physical activity only. This is because of the early stage at which their condition was diagnosed. The access to healthcare facilities makes it easy to routinely check on their blood glucose and know about any complications at the early stages.

“I have always gone for yearly medical check-up, I just feel it is good as the hospital is there anyway” (Yaranto 67 years, female diagnosed in WA).

And:

“I guess you could say the ease of using the hospital....this is why I go, you know?” (Mange 57 years, male diagnosed in the UK).

This is however not the case in WA: to access a competent specialist in T2DM care has been discussed as very difficult due to the waiting times at the hospital. The long waiting time to access health services has been reported to affect the management of T2DM among participants in this study.

“We find it difficult, just the queue I have to get to the doctor is something else, is so stressful, it’s just not nice to have to go through such” (Hema 50 years, female diagnosed in the UK).

On the other hand, waiting time is relatively shorter in the UK as compared to Africa. This is mainly because of the calling services, which allow appointments to be fixed before the consultation date for patients. Participants explained that the ease of fixing appointments and the short waiting time contribute to better management of their T2DM than in WA.

“Getting here have been good when it comes to seeing the doctors, I tell you, I just call to book my appointment and then attend the day they ask me to come in... so much easy and less stress I tell you. I wish we had such in Nigeria to be honest” (Yeriyaya 77 years, male diagnosed in WA).

Not much was discussed in terms of the duration of consultation as the difference between Africa and UK consultation was not seen as significant. Participants reported that they are more convinced that consultation in the UK will yield better outcomes for their management of T2DM.

However, most participants agreed that UK medical professionals are effective and have the expertise to help them achieve better management of their condition. Although some participants mentioned how doctors in Africa are better at listening to them during consultations. This is mainly concerning understanding the experiences of patients and what they are going through. One participant shared an experience of how his doctor in Africa continued to listen and assist him until the cause of his symptoms were found, although he put this down to the doctor using him as guinea pig by experimenting with different reasons for their symptom until the final cause was found. The shared cultural experiences might be the reason for this perception.

In general, there is a perception of better healthcare services in the UK than in Africa, which contributes to their management of T2DM. Participants discussed how

they found the treatment they receive to be very helpful in the UK. Mainly because most hospitals are better equipped with both work force and excellent standard medical equipment than what is found in Africa where human and financial resources are limited.

“Although I will rather talk to doctors that can fully understand my concerns I would say it is better to know that I will be treated with the best available facilities here which are not available in Africa” (Bolu 44 years, female diagnosed in WA).

In addition, the availability of universal health coverage means these individuals are not expected to pay for most of the healthcare services needed for the management of T2DM at the point of contact. In the UK, the healthcare system under the NHS is funded by taxpayers and is open to access by all residents in the country (Harker 2018). Furthermore, most patients living with T2DM are entitled to free consultation and medication under the NHS scheme.

“They usually send me reminder for my yearly check-up and other important appointments that I need, it is just so easier for me” (Junde 82 years, male diagnosed in the UK).

Participants shared from experience on how costs of managing T2DM affected their management of the condition in Africa. This is because they usually pay for their medication, consultation and tests due to the out of pocket healthcare system that is in operation. The treatments that patients receive are dependent on their ability to afford such care. It is very important that patients are willing to pay for their medical expenses especially if the best services are desired. However, coming to the UK has changed the cost of managing T2DM for all participants. This highlights the benefits of managing T2DM in the UK over managing it in WA with the support that is available from the medical healthcare services in the UK.

“You know I was buying fake medications that I did not know, and my blood sugar just kept rising... not knowing drugs were not working. It was only God as I almost died from that experience” (Yeriyaya 77 years, male diagnosed in WA)

And:

“The more money you have... then you can afford to go to private hospitals and buy expensive and quality medication is how you will better control your sugar level o... nothing is free” (Kinjile 72 years, male diagnosed in WA).

It was found that beyond clinical settings, social support was important in the management of T2DM. Type 2 diabetes mellitus is a person managed health condition that is affected by social interaction. In the UK, participants discussed how they have been provided with social support from community groups with other members living with T2DM to interact and share their experiences in addition to learning. Several charity organisations were mentioned to fund events that promote awareness and education for WAIs.

“My people at our group are just the help I need sometimes, it helps to get this useful information and talk to others about any issues I am facing I tell you” (Mam 64 years, female diagnosed in the UK).

A different scenario was reported concerning WA where there is limited support in terms of awareness and organised community gatherings for sharing experiences and training. Interestingly, there are several kin support networks that people were able to access within the communities. This might be due to the collectivistic cultural interaction practised in this environment.

“There were no active support groups that can help us through the difficult times of being diagnosed with diabetes in my country, they just give you medication and ask you to go home and that is it... controlling that thing is all on you” (Yaranto 67 years, female diagnosed in WA).

And:

“I only have my close family to help me., the government has not done anything to help, very disappointing” (Balabi 78 years, male diagnosed in WA).

The analysis of *living with it* category in this study highlighted the strategies and actions by which WAIs manage their T2DM in the UK. The understanding of these strategies employed in the management of T2DM in the UK can be valuable in helping these individuals achieve better management regime. Although the findings of this study have theorised the processes of managing T2DM and important

contributing factors to the condition in the UK, there is a need to identify the core-category that can explain the processes. This aspect of the study finding will be explored in the next chapter.

5.5 Chapter Summary

This chapter presents an account of the construction of the three theoretical categories and their analysis that emerged in this study. The three categories presented identified how WAIs manage T2DM, forming health-related behaviours in the process. *Striving to adapt* explained how WAIs perceive the changes that are experienced in managing T2DM after migration. *Finding out* identified how participants come to know about their T2DM status, which influences the management of T2DM. *Living with it* is the last category presented; this category detailed the strategies that WAIs employed in managing their T2DM. The categories situated the perception and interpretation of WAIs experiences in their management of T2DM. The findings from the study highlighted that WAI manage diabetes through social processes; they interact and attach meaning to the actions involved in the management. The influence of living in WA was well pronounced in all categories as related to managing diabetes. The next chapter (Chapter 6) furthers these findings to identify the core-category, which provides an understanding of the relationships between all the theoretical categories while bringing the experiences of participants into perspective.

Chapter 6 Findings-Core Category and Theory

6.1 Introduction

The previous chapter (5) presented the findings of three categories that explained how WAIs in this study manage their T2DM in the UK. In this chapter, the process of analysis that resulted in the identification of core-category is presented. The process of generating a theory in CGT may include the emergence of core-category. The purpose of conducting a GT study is to generate a theory that explains the patterns of behaviour, which are relevant to the people involved in the study (Turner et al. 2018). This chapter concludes the identification of a core category that integrates the theoretical categories to make up a theory. This was done by exploring the meaning that people attach to their experiences and how they understand the phenomenon within a social context. Through exploring and understanding how and why people undertake social processes is how the nature and origin of the phenomenon under investigation can be understood by providing a theoretical explanation for social processes under the phenomenon (Mills et al. 2006).

This category provides accounts for the dynamics in the occurrence of a phenomenon and the circumstances surrounding it. It provides an explanation of how people's behaviours are patterned within the process of social interaction (Hallberg 2006: Glaser 2004). Exploring the meanings attached to peoples' narration of their experiences in relation to a social process and determining how people understand a phenomenon forms their action within a social context and is an important part of GT. This then makes it possible to gain insight into motivations for their actions and perception of the phenomenon (Charmaz 2006). The construction of a theoretical explanation to document the conceptual analysis of data was used to highlight the process of core-category identification. Analysis revealed the core category that shapes the process of management of T2DM among WAIs, what influences their decisions on management, behaviours concerning their condition, interactions with others.

6.2 Identification of Core Category Features

Overall, the analysis suggests that T2DM management among WAIs populations is a dynamic process, with lifestyle changes facilitated or inhibited throughout the

management process. To identify the core-category, there was a need to integrate categories to create a unifying narrative.

The process of management of T2DM was seen to lead participants to achieve their normality. It was in this process that the concerns that most participants describe in their narration arose the need for them to achieve normality in their ways of living. In relation to the research question of this study, the experiences of participants go beyond their need for normality to adaptation to the new experiences in the UK. The synchronisation of the experiences of living normal and adaptation to the new, directs the management of T2DM among WAIs.

The process of synchronising principal categories to result in the emergence of the core category is presented in figure 6.1. The transcripts, codes and memos were revisited for theoretical construction of T2DM management, which provided insight into the process of management of T2DM among this population.

The main concern that participants recounted in this study was the need to live life as normal even with T2DM. Phrases such as 'managing in my own way' 'living as I can' 'I have not allowed much to change' 'I do what I know' 'these things are so unfamiliar' were used to express their efforts to achieve this normality as envisioned. This influences their views, perceptions, beliefs and behaviour about management. I became immersed in the stories of participants in their transcripts, codes and memos that have been written in the analysis which allowed theoretical sensitivity to be achieved expanding on how the process of management operates when people are diagnosed with T2DM.

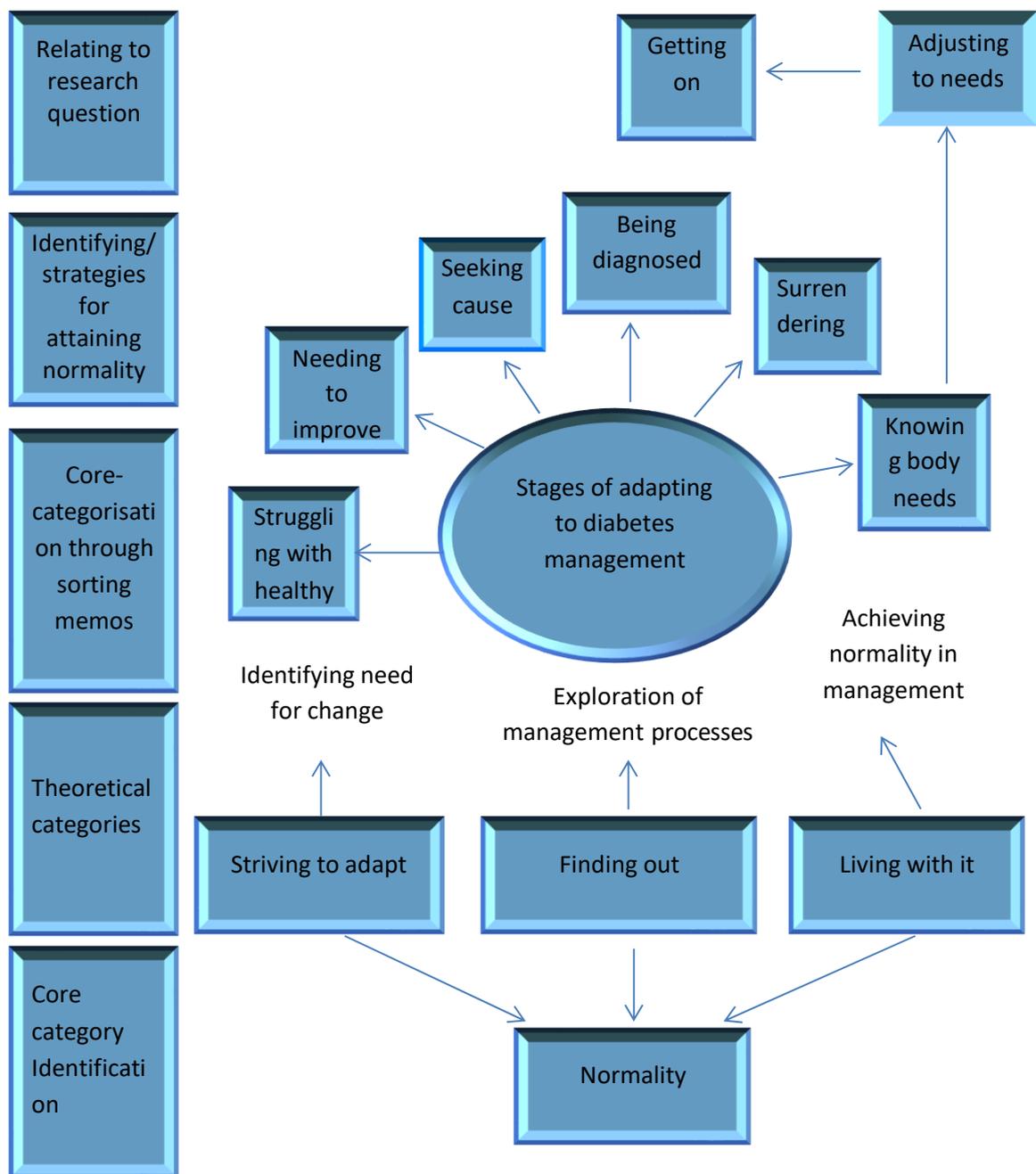


Figure 6-1 Synthesis of Analysis Leading to the Emergence of Core Category

Figure 6.1 presents the synthesis of the theoretical categories emerging from this study. Using these sorting the memos that were written for each category led to the emergence of the core category. This represented the main concerns of participants in the management of T2DM.

6.2.1 Why Normality?

The state of being normal means the feeling of knowing what is coming and expecting it. To be in the state of being normal, there have to be reoccurrences of events. The event has to have been experienced prior to this present time and have become expected and accepted. This is similar to the management of T2DM among WAIs, their state of usual or expected have to be conditions that they have experienced and are expecting. Following this line of thinking, there has to be a better understanding of normality and what is expected to improve T2DM management among WAIs living in the UK.

From the interviews with participants, it was noted that participants discuss their lifestyle experiences prior to T2DM diagnosis and migration.

Normality has different meanings to each individual in this study, as reality is a construction of their prior experiences. However, there are common features in the meaning of normality to these individuals. The main feature of normality that participants discuss is the need for familiarity with lifestyle recommendations in the management of their T2DM. Dietary recommendations that are familiar to these participants will be easier to adhere to than unfamiliar dietary recommendations. Establishing what is normal and familiar with these individuals in terms of lifestyle will ease their adjustment to T2DM management recommendations. Although changes are expected in the management of T2DM as a result of migration, the management regime requiring the least changes will be suitable for these individuals and better adapted as it least disrupts their normality and expectations.

6.2.2 Emergence of Normality in this study

The emergence of normality as the core category for this study came about from the different sources of data that were used in this study. Documents such as food timetables were made available to me as part of data sources for this study (see Table 3.4). These showed that participants' dietary choices focus more on what is

known to be normal and expected. For example, participants food choices are mainly replaced with traditional meals such that vegetables in the UK context might be boiled carrot, broccoli. However, vegetables in an African context maybe spinach, pumpkin, cassava leafs, which are cooked in tomato sauce with meats and fish, oil. Although, these are all vegetables and are called as “vegetable soup”, the ingredients differ which contributes to caloric contents and consumption. Meanings of lifestyle choices to WAIs need to be fully explored to assist with understanding the full meanings of T2DM management to individuals from this group.

Although terms such as equilibrium (gaining or regaining) might be suitable for conveying the experiences of participants in this study as core-category, there were justifications for not using this term. This is because normality was found to be more suitable based on the experiences of participants and the stories that were narrated. First, participants discuss their understanding of lifestyle and the need to achieve a sense of what is known in the UK through exploring their lived experiences in WA. Normality was what guided their sense of what was known, this was found to be the norm of how to live and lifestyle in their experience.

“You see the thing is I just want to be as I was, things have so changed but I will like to keep it the way it used to be. You know this is the way we know growing up, I don’t want that to be taken away even though I have all these health issues” (Bolula 48 years, female diagnosed in WA).

And:

“I have somehow made my way in working on the way I live here, I tell you, I had to manage to work on my diet especially, I try to find healthy alternatives to my native food” (Kantita 40 years, female diagnosed in the UK).

Although they discussed effort to balance their normality with the ways of living in the UK and especially in living with T2DM, this is where their efforts of adapting to new come into the discussion. Using equilibrium as the core concern of participants will not have adequately addressed this aspect of participants’ narrations. The efforts made in *striving to adapt* and adjust to new in their new environment would not have been adequately considered in the grand scheme of findings.

“It is how we manage the changes that are important, I have to reduce some unhealthy meals that I love, like eba, cassava fufu and the likes. But I grew up on swallow, so I had to look for healthy options like cauliflower fufu which is nice I tell you” (Josera 42 years, male diagnosed in WA).

And:

“I try to eat plenty of vegetable now, it helps to eat it and I reduce my food quantity I general. I cannot completely switch to English food, but it is paramount to look for better food type from my traditional food. I just want to stay with what I grew up on, at least I try to moderate my portion is the important thing here” (Nimbabo 49 years, male diagnosed in the UK).

And:

“I know my doctor tell me different things to eat, I just look for something similar in my traditional diet. I have to tell you, they don’t know all the things that we have that helps with diabetes. We have food that are diabetes friendly and herbs that helps, I just try to get those to support everything else am doing here” (Kelora 57 years, male diagnosed in WA).

Going by the narrations of participants particularly in relation to strategies they have adopted to manage T2DM in the UK, there is a thread of impact of lived experience. They expressed their desire and need to keep their normal ways of life in their management of T2DM. Although they acknowledged the need to make some lifestyle changes, these changes are still guarded by their lived experience and desire to keep close to their ways of living as much as possible. This highlights the influence of normality in their decisions of managing T2DM, this is due to their lived experiences of what they know to be normal way of living prior to migration and T2DM diagnosis.

In addition, the normality represents a sense of what was known prior to migration to the UK. Attaining equilibrium does not account for their experiences prior to migration. Attaining equilibrium individuals sort to maintain and balance lifestyle

practices in such a way that protects and keep in balance their interest during the period involving considerable change (Levy 1999). This means the efforts and strategies adapted in terms of lifestyle choices are geared towards keeping in balance their lifestyle. In looking at equilibrium definition, people make efforts in maintaining their lifestyle after events that cause the change. This does not explain the experiences of that individual prior to the change that occurred. Also, this does not highlight the impact of strategies to adapt to the new lifestyle that has emerged as a result of the change experienced. In supporting the findings of this study and finding normality to be better suited for this study, normality seems a phase that participants strive to achieve before finding equilibrium in their new normal. Although participants' effort is to attain equilibrium and balance their ways of living, the ultimate concern is more towards achieving normality while adapting to the new of living with T2DM and moving to a new environment (UK). Achieving equilibrium would have been to be comfortable in their new environment (in terms of lifestyle); however, there was a need beyond just achieving a balance but to keep the normality of their lifestyle prior to migration. Ensuring that a balance is achieved is paramount but holding normality is the ultimate concern of participants. Gaining or regaining equilibrium will impact on achieving balance in their way of living. This means there will not be much concern in ensuring their ways of living prior to migration is well integrated into their lifestyle choices in the UK. However, as narrated in the participants' stories, ensuring that their ways of living prior to migration is incorporated as they adapt to living in their new environment. A memo was written on what normality entails and its contribution to T2DM management (Memo 6.1).

The process of achieving normality by participants in the management of T2DM appears to be facilitated by the desire to live life in a familiar manner on lived experiences. Normality is a subjective concept for participants and achieved in different ways. This concept affects how people manage, control, navigate and moderate their living with T2DM, which ultimately affects the behaviours of people in their management of T2DM. Achieving normality can be significant, as it seems to drive participants' management of their T2DM.

What connection exists?

A connection exists between the process of achieving normality and the behaviour that people exhibit while managing their T2DM. When people report low achievement of normality, they struggle with managing their condition. It seems they had to unlearn their prior lifestyle and then learn the new as recommended lifestyle in the UK. This is the aspect of lifestyle recommended finding a balance to adapting to the new. On the other hand, people who manage to achieve normality, present better with the management of their condition.

What is the core feature of normality?

DM management is influenced by people's desire to achieve normality with lifestyle recommended while living with T2DM. These processes of normality influence how people manage their T2DM condition. Normality is seen as the least lifestyle changes that are required of them in managing T2DM.

What is the impact of this feature?

Achieving normality can result in positive outcomes of T2DM management when behaviour is directed towards the healthy and this is then seen as the 'new normal'. Conversely, reverting to unhealthy choices that can negatively impact management, there is a need to find the right feature in normal to manage T2DM condition.

What does this mean?

It means that normal can be newly formed or old normal, which is influenced by adaptation. It is essential that the goal of each individual is assessed and discussed. This is to understand and find a balance between individual goals of normal and healthy behaviours to manage their T2DM. T2DM management appears to be mediated by the role of normality within the lifestyle behaviours of PLWDM.

The identification of *normality: adapting to new* as the core initiated a line of investigation into how experiences of normality can influence participants' behaviour in managing T2DM. This seems to suggest that peoples' management of T2DM is dependent on their achievement of normality in their life and therefore developing regulatory mechanisms for the achievement of it. This sheds light onto how normality may operate as an intrinsic barrier or facilitator when working on managing T2DM among people. This appears to suggest that people's achieving optimal T2DM management is dependent on their ability to moderate normality and develop mechanisms for achieving the '*adapting to new normal*'. To refine and integrate the core-category identified in this study, the analytical process supports the development of the core category achieving an abstract rendering of the data. This was important to identify the central variable of the data that unifies the theory (Glaser and Holton 2004). Figure 6.2 situates normality in behaviours that act as facilitators or inhibitors of the T2DM management process.

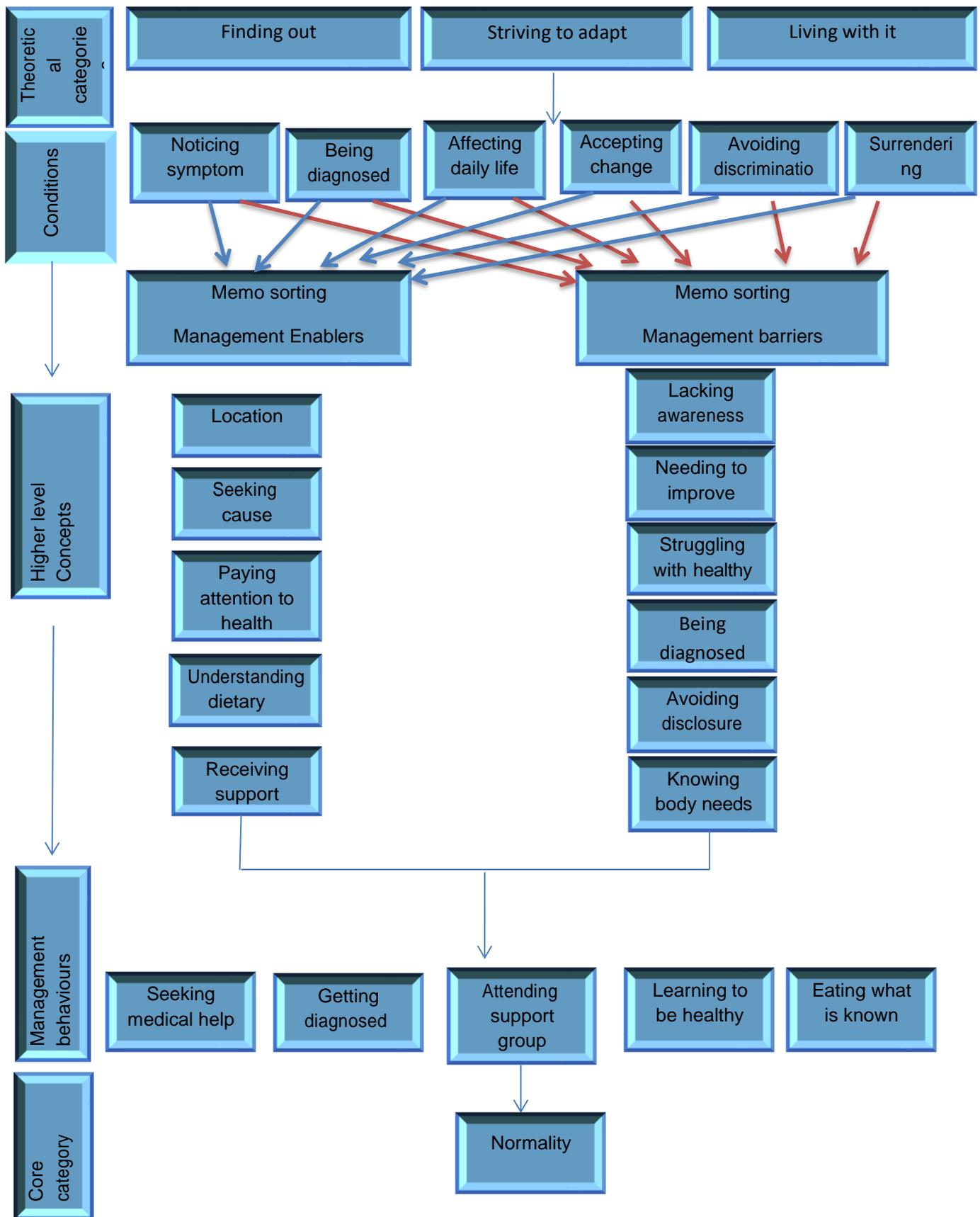


Figure 6-2 Enablers and Barriers to Normality of Managing Type 2 Diabetes Mellitus

Figure 6.2 presented the analysis of the emerging core category. The principal categories that emerged in this study were analysed to present the picture of living life with T2DM. The contributing factors to the core category that emerged from this study were presented as barriers and enablers to achieving normality in managing T2DM. Understanding these factors in terms of barriers and enablers to optimally manage T2DM among this population can be valuable to support the management process. After the emergence of the core category in this study, there was a need to tie all the conceptualisation into theory from participants' stories.

Next, memos written during the process of coding were sorted theoretically to distinguish between processes that act as enablers and barriers to management (second row). These processes then led to the attitudes and behaviours that influence T2DM management among West Africans living with T2DM in the UK (third row). The experiences and feelings recounted were associated with needing to achieve normality about living with T2DM. The core was identified as participants' concerns or goals in the processes which is stimulated by their behaviours to attain normality in their life. The features of the core-category were clarified through memos that were written as analysis reaches theoretical maturation.

6.3 Understanding Normality as Core-Category

As a constructivist grounded theorist, there were expectations about this study that were gotten during the background reading for this study. It was anticipated that due to the life-threatening complications that come with living with T2DM, maintaining blood glucose for participants living with T2DM would be the priority for participants. Looking back at the process of this study, I can now understand and appreciate the *Normality: Adapting to new* is central concern among participants.

The participants explained how they value living their life as normally as possible. Removing barriers to living, as they know was essential for them. They expressed the need to get satisfaction from living, not just living as recommended. It, therefore, makes it important to understand the world as seen by PLWDM rather than outsiders constructing their world as we see it for them.

In the process of analysis, finding a core-category that encompasses what participants' main concern was a journey that was highlighted through their responses. *Accepting my fate* was initially thought to be the core concern of

participants. Resisting having it as the core-category was needed as it was not able to account for the category *striving to adapt*. A core category must account for all aspects of theoretical categories in the study (Hallberg 2006). This important category was not accounted for, as the core-category was not able to explain the pattern of people trying to be healthy by striving to achieve their goals. It was later in the analysis process that I became aware of the incompleteness of the core-category. This was discounted and further analysis was carried out until a better fit emerged.

Most participants were more concerned with recounting their experiences of diagnosis and living with T2DM. The focus of their accounts concerned complications and live normally with T2DM. Not having complications from T2DM was an indication for them that they are normal, irrespective of their T2DM sugar level status. Their agenda of *normality* became manifested in their need to live as they used to know it before *finding out*. The emergence of *normality: adapting to new* fits because participants' thoughts, feeling, perception, struggles, attitude and behaviours were directed towards achieving normal living with T2DM.

It is important at this point to note the difference between needs and wants in relation to the core category. Need is what is required for an individual to live healthily, in absence of which a person cannot lead a normal daily active life, whilst want is the desire, which is something that might make living better but not affect the survival of that individual (Mcgregor et al. 2009). Although the core category of *normality: adapting to new* might be viewed as a want for participants, it was referred to as a need from participants' narrations. The need to live life as normal while striving to adapt to T2DM recommendations is an important contributing aspect of living with T2DM. This accounts for peoples' perceptions, beliefs, attitude and behaviours, all of which contribute to the survival of these people.

The findings chapter has presented, discussed and explored the significance and meaning of PLWDM as highlighted in the principal categories of *finding out*, *striving to adapt and living with it* and their impact on T2DM management among WAIs. This chapter presented the core-category that explains the theoretical categories in this study. Figure 6.3 highlights the interaction between the categories and the core-categories.

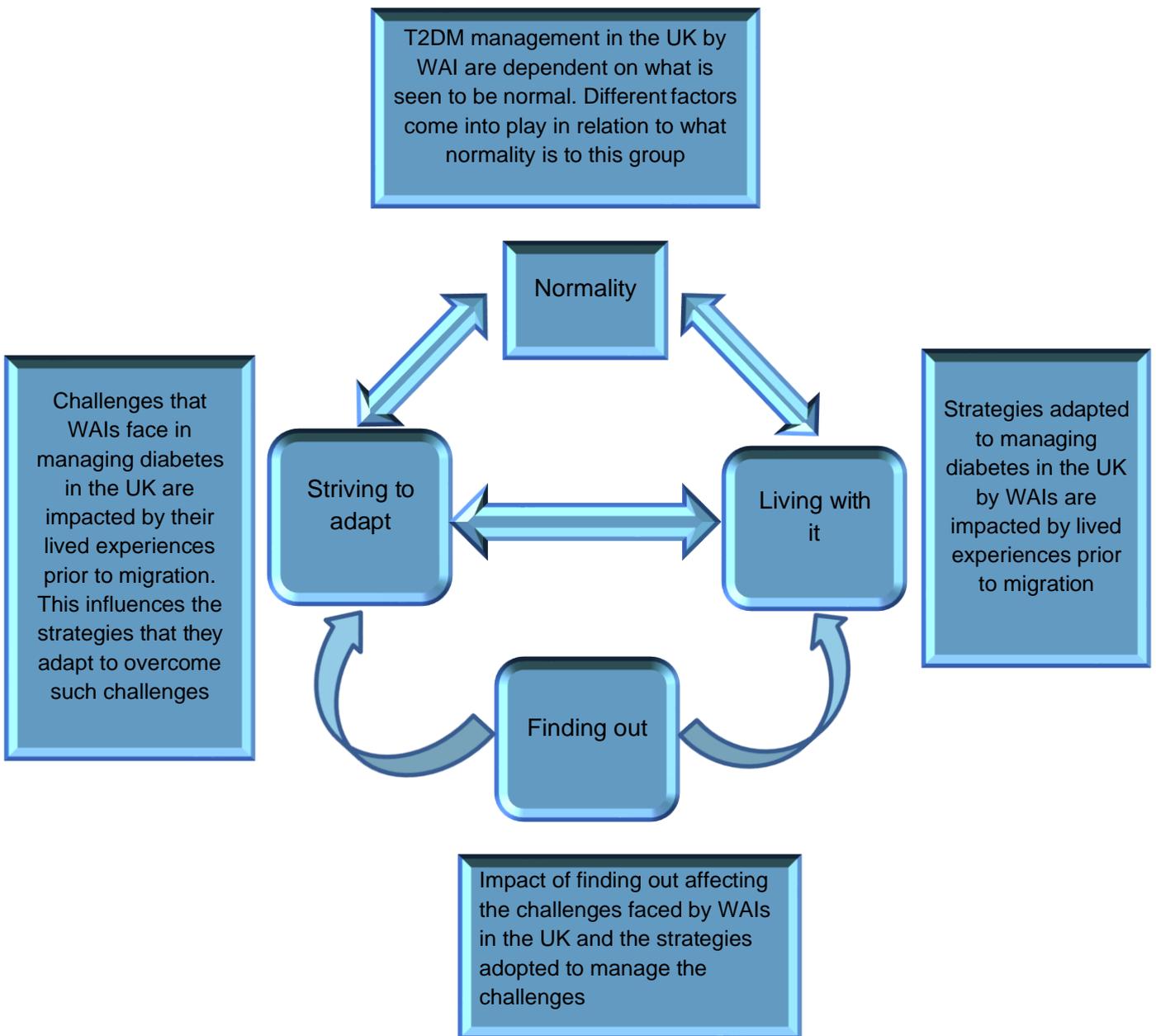


Figure 6-3 Relationships between Core Category and the Three Principal Categories

Figure 6.3 expands on the relationship that emerged among categories in this study. The main impact can be from the lived experiences of participants in *finding out* category about their T2DM. This influences their challenges that they experience in the UK as related to managing their condition (*striving to adapt*). *Living with it* category is also influenced by the findings out category; this is because the strategies adopted for managing their condition is impacted by their lived experiences. Finally, *striving to adapt* and *living with it* combined to influence each other and the *normality* of the individual. All the categories and core category led to the emergence of the Normality theory.

6.4 The Theory

A theory has several definitions, in its most basic form; a theory predicts or is used to explain a phenomenon. Theory was defined as a conceptual framework that identifies connections, or the lack of, between concepts/constructs that describe a phenomenon, which helps in furthering academic knowledge of the phenomenon (Turner et al. 2018). This definition of theory places emphasis on two functions of theory. Firstly, a theory is primarily responsible for the description of a phenomenon by explaining or predicting the phenomenon. Secondly, theories have the function of furthering the literature, which can be utilised by researchers and practitioners in research and practice development. A developed theory either can be verified or falsified (Stewart et al. 2011).

The aim of developing normality is mainly to explain the phenomenon of T2DM management among WAs. In the emergence of this theory of T2DM management, it was expected to further the literature as no study has been conducted to provide such explanation. This was achieved by furthering the theory of chronic disease management found in the literature. An example of this is the contribution to the Moss-Morris model of adjustment to chronic illness (Moss-Morris 2013). This model presents adjustment factors that contribute to the adaptation to living with chronic disease. However, the influences of lived experiences and culture were not adequately represented in this model (see Figure 6.4). The theory that emerged from this study was able to highlight this aspect of adaption. Similarly, Charmaz's (1995) theory of adaptation to impairment focuses on the current challenges of living with a chronic condition. However, it did not give a full account of lived experiences and

cultural influence in the management of chronic disease such as T2DM. This study was able to establish the influence of culture and lived experiences on the management of chronic disease conditions like T2DM. The adaptation to the new normal is dependent on the cultural meanings of what normality is to them.

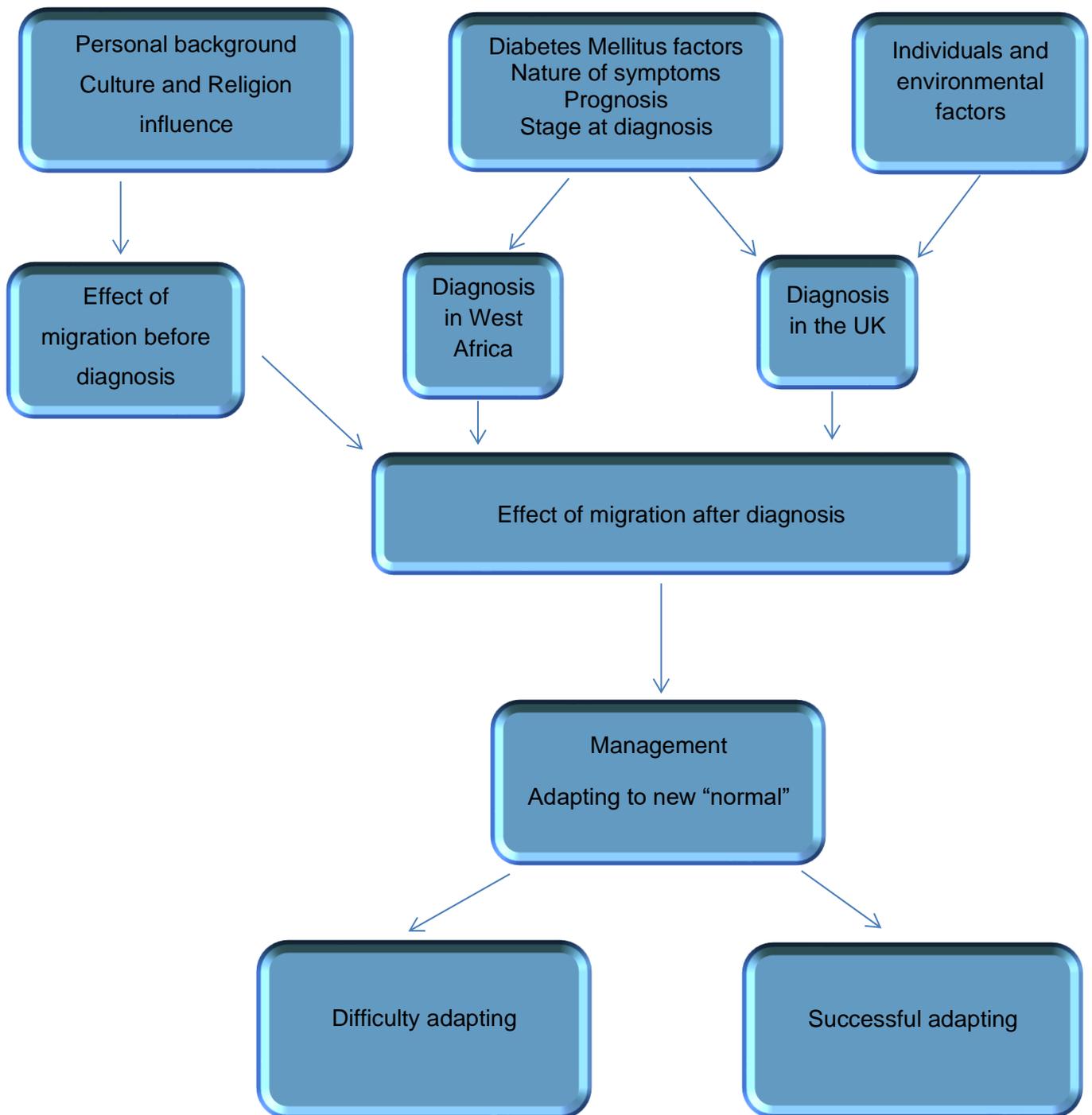


Figure 6-4 Impacts of Lived Experiences on Adapting to New Normal
Adapted and Modified From: Moss-Morris (2013).

6.5 Generating Storyline

The interpretation of the emerged theory follows the generation of a storyline that defines the central phenomenon in this study. Strauss and Corbin (1990) recommended the use of focus coding in the integration of all interpretive works of analysis. The process of conducting focused coding for this study has been presented in chapter 4 (see Section 4.2.13). To generate a storyline, the researcher has to ask questions of the central phenomenon and discuss its processes, as they dynamically exist in ecology (Scott 2004). In this study, the question of the central phenomenon was asked to be “What is the central phenomenon describing the nature of lifestyle management of T2DM among West African immigrants living in the UK”? In addition, “How does this phenomenon vary in the changes experienced both before and after migration from participants’ perspectives”? The writing of general storyline or descriptive overview and verifying with participants assisted in the understanding of the emerging theory for this study.

6.6 Normality Storyline Construction

In constructing the theory storyline, salient features of the core category or central phenomenon were expanded as the thread of lesser phenomena are tied and woven around it (Chun Tie et al. 2019; Birks et al. 2009). For example, *Normality* theory storyline has three basic processes by which participants manage their T2DM in the UK: *striving to adapt, finding out and living with it*. The process begins with changes experienced in dietary habits, physical activity and medication use after migration. This phase dissipates the time when individuals strive to meet the changes needed to manage T2DM after migration to the UK. They struggle to adapt to the recommendations, leaving their familiar lifestyle partly due to the need to control their blood glucose. In this storyline, participants were faced with the news of their developing T2DM, adapting to meet the needs of managing T2DM, to focus on what’s important, to strive to be healthier, to live with their condition by achieving optimal management regime in the current environment in the UK. Migrating to a new environment thrust those diagnosed in WA back into the struggle of adapting to a new regime of management, disrupting whatever balance they might have achieved before migration. Each has a perception of what constitutes management that came from experiences of living with the condition, religious and

cultural beliefs. Individual beliefs were fundamental to preferences and coping strategies adapted to managing T2DM.

The change in environment influence their access to free, world standard healthcare services but requires lifestyle changes to complement the environmental systems available for managing T2DM. Hence, they perceive their health to have improved due to the environmental change compared to in WA. Participants were intrinsically contented by their individual health status despite dietary and physical activity challenges in their new environment making them less concerned about improving their quality of life. They recognised differences between WA and the UK's environmental support systems for managing T2DM. They acknowledge that being able to optimally manage their T2DM is important through their commitment to personal development, but in their view their health experience in the UK is better than in WA. The availability of access to T2DM management support programmes in their current environment is satisfactory for them as they adjust to living with their condition. It is important that medical professionals know when individuals have reached this stage, what are the compromises that they have made, how will this affect their T2DM management. These need to be considered when recommending T2DM management among this population.

The use of storyline as a guide helps in weaving a version of the story as a higher version (Scott 2004). Integrating categories processes at a higher level of abstraction in a single story for the management of T2DM makes the emergence of the theory from this process. The process highlights the contribution of personal beliefs, perception and experiences before T2DM diagnosis and migration to their new environment in the UK. Patterns, repeated relationships were identified to give the emerged theory specificity. By providing credibility, transferability and dependability of the data across all participants and relation to the literature, the trustworthiness of the storyline and the emerging theory was accomplished (Mills et al. 2014

6.7 Chapter Summary

This chapter presented an account of the construction of the core category as the outcome of the analysis. The *Normality: adapting to new* explains the ways in which WAIs aim at meeting T2DM management requirements and needs. The achievement of *Normality* can contribute positively to the optimal management of T2DM among these individuals. Dealing with social, environmental, physical and psychological issues are all interrelated and while priority for each need may differ, the physiological need of achieving normality was a common need for these individuals. *Normality: adapting to new* goes beyond the gaining access to healthcare in the UK, there is a need to be able to keep their normality prior to migration. This finding is important in T2DM management as it can assist healthcare professionals in areas to focus attention in supporting WAIs in the UK. The next chapter (chapter 7) presents discussions of the principal categories, core-category and the emerged theory in general. The discussions of the findings from this study were situated in the literature to enhance better understanding and contributions of the theory to knowledge.

Chapter 7 Discussion

7.1 Introduction

After the presentation of the core category and the theory that emerged from the previous chapter, this chapter discusses findings of this study in relation to the literature and broader policies about health management among immigrants. It sets out the factors that contribute to each category, how these affects managing T2DM. This was achieved by exploring key aspects of the three theoretical categories of this study (see Chapter 6). The three categories that emerged from this study provided the much-needed initial step in understanding these social processes on how these individuals' lifestyle choices and experiences interact with their management of T2DM in the UK. This contributes to a better understanding of the West African immigrants' T2DM management experiences. By drawing on the experiences of WAIs in living with T2DM, a new understanding of the social processes that influence their behaviour and choices was gained. These are discussed in the section below to expand on their contribution to answering the research question and addressing the objectives of this study.

Research question

What are the experiences of West African immigrants in managing Type 2 diabetes mellitus?

Objectives

- To explore Type 2 diabetes mellitus management processes among West African immigrants living in the United Kingdom.
- To explore the factors contributing to the management of Type 2 diabetes mellitus in the United Kingdom among West African immigrants.
- To understand the contribution of change in environment on the management of Type 2 diabetes mellitus among this population.
- To explore how the identified factors may influence each other and the management of Type 2 diabetes mellitus among West African immigrants.
- To develop a theoretical explanation for the management of Type 2 diabetes mellitus among West African immigrants living in the United Kingdom.

This section discusses the study findings in relation to the existing literature concerning the management of T2DM.

7.2 Meeting Needs of Living with Type 2 Diabetes Mellitus in the UK

The findings of this study suggest that WAIs experience daily challenges that affect their T2DM management. This finding addressed the first objective of this study. This is concerned with exploring the processes involved in T2DM management among WAIs living in the UK. These processes encompass challenges that WAIs face in managing their condition. These challenges are mainly in relation to struggles in adapting to management recommendations in the UK. This finding is in line with studies on immigrants that are living with T2DM in Western countries where striving to adapt to challenges have affected T2DM management (Montesi 2016; Deng et al. 2013). Adaptation struggles were mainly pronounced in relation to lifestyle choices such as changes in dietary habits and need to improve physical activity level. The highlight differences in dietary habits and reduction in the physical activity level of WAIs after migration to the UK. Complex interplay of factors has been reported to affect the level of physical activity amongst black and ethnic minorities in the UK (Koshoedo et al. 2015). The influence of experiences of the individuals in terms of living with T2DM in the UK is being constructed with the processes they undergo in effort of managing their condition. The effect of changing environment due to migration has been highlighted as influential in the management process (Agyemang and van den Born 2018; Cook et al. 2011). Findings that WAIs are faced with challenging situations in reconciling T2DM management recommendations in the UK with their lifestyle of living prior to migration are interesting.

The influence of changes in the environment can be seen in the *striving to adapt* category. *Striving to adapt* highlights the challenges that are faced by the WAIs because of the change in environment after migration. Adaptation to chronic disease has been suggested in the literature as an influencing factor in the management of health conditions (Moonaghi et al. 2014). Adaptation is defined as the process of thinking and feeling that individuals' conscious awareness in making choices affects their human and environmental integration (Weinert 2008). Adaption is a lifelong process (Savickas and Porfeli 2012). This study found that *striving to adapt*

encompasses the processes in which WAIs develop an awareness of their needs and desire in the management of T2DM.

Maslow (1943) explained that needs and desire are the two motivational states that affect humans in meeting their goals. Motivational states are classified into five needs. These five states of needs can be divided into basic needs such as physiological, safety, love and esteem while the higher state of need is growth need such as self-actualisation (McLeod 2007).

Maslow's paper on the theory of human motivation has the lower order need of basic human need (physiological and safety needs). Basic needs are linked to survival purposes needs (food, sleep, sex, shelter, clothing, safety and security). The higher level of needs is the self-actualisation need is mainly linked to life experiences or achieving a status where humans become all they can be intellectually and creatively.

Maslow stated that people are motivated to attain or fulfil certain needs (Maslow and Lewis 1987). The fulfilment of basic needs (lower level) leads to seeking the self-actualisation (higher level). Basic needs or lower level needs have to be met before higher-level growth needs can be fulfilled (McLeod 2018; Avneet 2013). In relation to the finding of this category, *striving to adapt* is a form of basic need that WAIs work on fulfilling. This is particularly in relation to basic needs such as food, drink and shelter challenges. The fulfilment of these needs is dependent on lived experiences as it is concerned with why people act and think as they do. The findings of *striving to adapt* as a category are in line with the Maslow's philosophy. This is because the findings of the category revealed striving efforts of WAIs living with T2DM as a form of meeting needs. Adapting to the challenges they face in managing T2DM in the UK is a form of need that they aspire to meet. For example, participants expressed their efforts to meet basic needs such as diet, physical activity that are similar to Maslow's lower level need (Maslow 1943).

In establishing *striving to adapt* as a need that WAIs aspire to attain, the fulfilment of the needs is influenced by their lived experiences. Efforts required in eating healthy as recommended by healthcare professionals can be seen as a basic physiological need that has to be fulfilled (Kalra et al. 2018).

In meeting the needs required for adaptation of WAIs in managing T2DM in the UK, support is needed.

T2DM management is a chronic condition that requires input from individuals, families and society (Wiebe et al. 2017: Golics et al. 2013: Miller and DiMatteo 2013). Maslow again recognises the need receiving care and be cared for as a form of need being met (Jackson et al. 2014). My argument here is that meeting the needs of managing T2DM is essential and requires social support in achieving the adaptation needs that participants strive to achieve.

Participants described receiving support with managing T2DM, but this was limited especially among those that live alone. The limited support as described can be seen as not meeting the lower level of needs as identified by Maslow. This is particularly pronounced in the limited support from friends and family, which is also known as Kin support (Ajrouch et al. 2005). Migration affects the continuity of relationships with members of the kin network (Gierveld et al. 2015). This explains reduced contacts with kin networks, which affect the support gotten in achieving a healthier lifestyle (Kana'laupuni et al. 2004). This, in turn, affects the adaptation process in the management of T2DM in the UK. In this study, reports on the reduced kin network support were highlighted as an important aspect that affects the management of T2DM. The advantage of having kin network support was noted with reports on aspects such as healthy food preparation, reminders about physical activity and social activities. These aspects of T2DM management are important as they influence their efforts in striving to adapt to the management process.

In addition, *striving to adapt* was presented as a process that has not been attained, hence the discussions on stages that the category cover. Participants discuss taking each day at a time while working on fulfilling these basic needs. In moving through Maslow's pyramid of needs, the needs move from basic needs to growth needs, which are focused on the life experiences. This stated that individuals strive to achieve their lower level needs before moving to achieve a higher level of need (Maslow 1943).

The hierarchy of needs theory has been criticised for different aspects of the theory. For example, the theory was criticised for being based upon Western ideology and steeped in ethnocentricity (Hofstede 1984). In addition, the hierarchy has been criticised using collectivist and individualistic society understanding. The self-actualisation and self-fulfilment higher level needs are said to reflect individualistic society needs while a collectivist society is based on community, acceptance and

belonging within the structure (King-Hill 2015; Yang 2003). The hierarchy of needs has not been able to explain the changes experienced by immigrants in terms of their meeting their needs.

Although this study agrees with the hierarchy of needs, the findings suggest the levels might not be as clearly separated as presented in Maslow's hierarchy of needs. This is mainly because, in the effort to fulfil basic needs of adapting to dietary and physical activity needs recommendations, there is the self-actualisation need of having familiar lifestyle. Dietary needs are influenced mainly by lived experiences prior to migration. This study found that beyond efforts to adapt to basic needs, there is an aspect of self-actualisation that has to be met as well. This then raises the question of "What are the elements of self-actualisation in striving to adapt to basic needs in the management of T2DM among WAIs?" The answer to this question might be found in the discussion of lived experiences of WAIs in relation to meeting basic needs of dietary and lifestyle requirements prior to migration. They simultaneously strive to meet basic needs in their environment while higher-level self-actualisation need influences this process. These individuals work on finding a balance to integrate their preferred dietary and lifestyle practices prior to migration into the management process in the UK. Understanding the influences of lived experiences prior to migration on T2DM management can help in ensuring that an acceptable balance is found for meeting both basic and higher-level needs. This finding is supported by a qualitative study that explored the dietary practice of Ghanaian immigrants in the UK (Osei-Kwasi et al. 2017). The study reported that, although there were influences of migration in the dietary preference of immigrant populations, the preference for traditional diets that are seen to be familiar remained. Their preferences for traditional diets are forms of self-actualization, which influences their dietary adaptation in the UK. Collectively the findings of this study highlight the notion that lifestyle, particularly dietary preferences of WAIs, are forms of basic need which is influenced by the higher need of self-actualisation. These needs cannot be separated nor are they sequential; one aids the other as expressed in the literature (King-Hill 2015).

Alternatively, the findings of this study can be understood using the social-cognitive perspective of health promotion and behaviour, which emphasises belief constructs about self-regulation, consequences of action on behaviour and the social

environment (Hofstede 1984). The social cognitive theory explains that human behaviour is regulated by on-going self-influence exercises. Self-regulation is achieved through monitoring of one's behaviour, its determinants and its effects (Bandura 1991). In addition, the judgement of one's behaviour in relation to personal standards and environmental circumstances can determine the motivation and actions that individuals adopt. The importance of self-regulation was highlighted as encompassing self-efficacy, which plays an important role in the exercise of personal agency through its strong impact on thoughts, affect, motivation and action. The understanding of the theory supports the findings from this study, where the importance of belief and hope has been highlighted (Memo 5.3). Individual's human purposive behaviour has been explained to be regulated by forethought. This means that people form beliefs about what will be done, the likely consequence of their actions, the goal they set to meet desired action (Bandura 2001). This highlights the efforts of participants in striving to meet dietary and lifestyle recommendations in managing their T2DM. This study found belief of self-regulation as essential in understanding the management of T2DM among this population.

Generally, self-efficacy beliefs contribute to actions adapted to managing T2DM in their new environment. By holding on to beliefs about the impact of healthy dietary and lifestyle choices on the control of blood glucose, participants were able to adapt some lifestyle choices. This could be related to the self-regulation in social-cognitive perspectives of health behaviour as self-efficacy beliefs can determine outcomes and the willingness to change (Bandura 1998). It has been argued that the complex changes needed in behavioural change require the role of cognition (Hayes and Wilson 1995). Cognition that follows the social-cognitive theory has been used to explain the successful changes in eating behaviours of dieters (Ogden et al. 2006). This means that the cognition in beliefs of individuals can be used to understand their lifestyle choices in relation to managing T2DM. Following my explanation of the relationship between the cognition belief of individuals to their motivation, goal setting and actions to achieving the desired outcome, it is important to understand that beliefs are influenced by lived experiences. This has been reported in the literature confirming findings from this study (Singh et al. 2018). The need to explore the lived experiences of participants in relation to the management of T2DM becomes paramount for this study.

7.3 The Influence of Lived Experiences on the Management of Type 2 Diabetes Mellitus

Lived experiences were found to influence the management of T2DM among WAIs in the UK. This addresses the second objective of this study. The impact of *finding out* highlights factors that directly and indirectly contributes to the management of T2DM. Romano (1998) explained that “Experience, in its fundamental sense, is that which, by putting us in play ourselves, modifies us profoundly in a way that after having crossed, endured, traversed it, we will never be the same again: undergo an illness, mourning, joy, loving, travelling, writing a book, painting are “experiences” in the first philosophical sense, surely simple, but nevertheless trivial” (Romano, 1998, p. 197). Experiences in this definition are the knowledge gained as part of interactions with events or activities. Building on this definition lived experiences can be our knowledge of events and activities that have shaped our ways of living, beliefs and actions through our interaction with living life daily.

As stated by Romano (1998) experiences are part of life that shapes us, and we will never be the same after undergoing such events. They continuously and unconsciously contribute to our perceptions of the future, beliefs and actions irrespective of our environment. It can be inferred that WAIs lifestyle practices in their management of T2DM are products of their lived experiences in WA prior to migration to the UK. It is essential to improving the management outcome of WAIs; there is a need to further explore their lived experiences as a context for their management practices in living with T2DM.

The theoretical category ‘*Finding out*’ highlights different aspects of the journey of WAIs in the diagnosis of T2DM, which relates to lived experiences. This category explained the interactions between participants and healthcare system prior to diagnosis and the influences on management of T2DM in the UK. It further highlights how participants situate themselves as patients who are shaped by their lived experiences such as accessing healthcare services. Participants draw on their experiences of accessing healthcare services in WA, which influences their management of T2DM in the UK. These experiences were majorly unpleasant and significant in the delay of diagnosis that emerged in the *finding out* category. This is particularly pronounced among people that were diagnosed in WA. Alzubaidi et al.

(2015a) reported negative experiences in accessing healthcare services can be barriers to accessing healthcare services in the management of T2DM. This is similar to the findings of this study in relation to accessing healthcare services prior, during and after diagnosis with T2DM in WA.

In addition, the social-cognitive theory explained that belief plays a pivotal role as a basis for action. In this, it means that if people do not believe they can produce the desired effect by their action, they may be less inclined to carry out such action. In relation to the findings of this study, accessing healthcare services was in most cases the last resort for seeking explanations for their noticed symptoms. All participants diagnosed in WA were diagnosed after noticing symptoms. Similar findings have been reported in the literature in terms of delayed diagnosis (Fasanmade and Dagogo-Jack 2015). The delayed diagnosis has also been reported among immigrant populations living with T2DM (Roche and Wang 2014: Derosé et al. 2007). It is estimated that T2DM onset can begin 10 years before the diagnosis of the condition (Porta et al. 2014). This may be longer among West Africans where there is limited access to T2DM testing and diagnosis.

The delay in diagnosis in most cases leads to difficulty in meeting dietary and lifestyle recommendations in managing T2DM among this population. Delay in diagnosis has been implicated for higher risk of complication which can result in mortality (Porta et al. 2014: Roche and Wang 2014). For example, because of the delayed diagnosis among Africans, a study reported that 21-25% of patients already have developed retinopathy complications of untreated T2DM (Mbanya and Sobngwi 2003). Nephropathy prevalence was reported to be between 32-57% with a mean duration of 5-10 years. In addition, lower extremity amputations can be up to 7% of T2DM patients and about 12% of T2DM patients hospitalised have foot ulceration as reported in the study (Mbanya and Sobngwi 2003). However, the study did not investigate further the cause of the delayed diagnosis as a common occurrence among people in these communities.

This study has discussed the reasons for this occurrence with participants' experience before diagnosis. Beyond the individual factor (personal agency) that is used to explain the self-regulatory aspect of delayed diagnosis, there is the impact of the influence of others (proxy agency). This is the reliance on the impact of others to act on one's best interest to secure the desired outcome (Bandura 2001). The findings of this study were heightened as the influence of others in seeking symptom

explanation; fits with this understanding (see Section 5.4.2.). Beyond the personal agency, there is the impact of proxy agency in the diagnosis of T2DM among WAIs. Furthermore, the social cognitive theory is the impact of collective exercise through social coordinated and interdependent efforts (Bandura 2001). This aspect of the theory related to the impact of environmental factors as reported in this study (see Section 7.5). The environment in which individuals live influences their finding out about T2DM and the management of the condition in general. In this aspect, the limited availability of healthcare services in the West African region has affected the *finding out* process. The impact of this is more pronounced in WA where access to healthcare services is limited (Alloh and Regmi 2017).

Finding out partly explains the *striving to adapt* challenges that they face when migrated to the UK. This is mainly as impacts of beliefs, which is because of lived experiences in accessing healthcare services for the diagnosis of their T2DM condition. Bandura (1998) explained that beliefs could be developed through sources such as mastery of experiences, vicarious experiences through social models, social persuasion. Negative experiences and beliefs about healthcare services made seeking medical explanations for symptoms noted as last resort. In the findings of this study, participants express how they try other sources of treating their symptoms before going to a healthcare facility as a later resort thereby delaying diagnosis. Similarly, Alzubaidi et al. (2015b) reported the delay of healthcare services among Arabic speaking immigrants by accessing as last resort after the use of alternative treatments. This shows their belief in the possibility of their condition to be treated using alternative medicines before going to healthcare services.

In addition, there was a lack of social persuasion in terms of believing the services of healthcare facilities in these environments. This may explain the lack of awareness that was referenced by most of the participants in this study. Having information about healthcare availability can be influential in managing T2DM (Pardhan 2018: Siddique 2017). There is a lack of routine testing services in these areas, which may have assisted, in early diagnosis for these individuals prior to noticing symptoms (Azevedo and Alla 2008). In addition, there was the out of pocket payment for the diagnosis and treatment of T2DM by patients in WA. This influenced the lack of belief that some of the participants express in healthcare services, which in turn contribute to the late diagnosis. Out of pocket payment has been reported as a

cause of reduced drug and consultation adherence among individuals living with T2DM (Swain et al. 2018).

Some of the issues experienced by WAIs in accessing healthcare services in WA can influence their management of T2DM due to the limited resources allocated to healthcare services in WA. For example, according to WHO (2011b) report, the Abuja 2001 declaration by African Union government to allocate at least 15% of its annual budget to the health sector has not been met by most of the member states. Only one-member state has been able to meet the target with others yet to meet up. The impact of the limited resources allocated to the health sector resulted in challenges that participants reported in delay at being diagnosed with T2DM and the management of T2DM in this environment.

This aspect of limited resources highlights the impact of Social Determinants of Health (SDH) in the management of T2DM among WAIs. SDH are explained as the inequality in health in which people are born, live, work and age as a result of inequality in power, resources and money (Donkin et al. 2018; Marmot et al. 2006). They are impacted by factors such as social, cultural, political, economic, commercial and environmental factors (Elwell-Sutton et al. 2019).

SDH accounts for inequality in life expectancy. For example, the average life expectancy of 83.7 years in Japan while it is just 50.1 years in Sierra Leone (Donkin et al. 2018). Similarly, SDH have been implicated for the poorer management of non-communicable diseases in Africa (Alloh et al. 2018b; Kengne et al. 2013). The findings from this study agree with the impact of SDH among WAIs. This is highlighted in the explanation of environmental influence in the delayed diagnosis and poorer management of T2DM among participants prior to migration to the UK. In terms of the influence of *finding out* the category in the management of T2DM in the UK, participants continued to refer back to their experiences of lifestyle habits during and prior to diagnosis with T2DM. This highlights the need to improve the management of T2DM while understanding the impact of lived experiences in the process among the WAIs.

7.4 Adopting Strategies to Managing Type 2 Diabetes Mellitus

This study found that strategies are adopted for the management of T2DM among participants. *Living with it* from participants' responses was discussed as the

adaption strategies of accepting the permanent change of living with T2DM. This was narrated as a consequence of *striving to adapt* and how they were able to deal with their challenges.

The challenges that WAIs face in the management of T2DM in the UK creates the need for strategies to meet such challenges. This is seen as a key aspect in their motivation towards and regulation of T2DM -related behaviours. This aspect of T2DM management was significant as it highlights the balance that individuals adapt within their process of T2DM management. This process is a continuous development through the outcome of their actions. WAIs intuitively form strategies and actions in response to their management challenges, which are influenced by their lived experiences. This suggests that strategies adapted to manage with T2DM may be instinctive and unaware within their new environment.

Self-regulation systems are explained to mediate the effects of most external influences and provide the very basis of purposive action (Bandura 1991). Although the theory states that most human behaviours are purposive and regulated by forethoughts, the influence of lived experience makes the awareness of their choices and actions to be less marked.

Self-regulation explains that people form beliefs about what they can do with the anticipated consequences, they set goals and guide their action in an anticipatory way (Maes and Karoly 2005). This study found that setting goals are influenced by lived experiences prior to migration that guide their actions and their understandings. These individuals might not be aware of the influences their lived experiences have on the goals and actions they employ to manage T2DM.

This is pivotal in the management of T2DM among WAIs; the impact of lived experiences influences the goal that they set in managing T2DM. The use of avoiding disclosure is suggested as a strategy informed by lived experiences prior to migration. Studies have reported how Africans avoid disclosing health conditions such as HIV/AIDs as a strategy to manage the condition (Maeri et al. 2016; Arrey et al. 2015). This study also found similar hesitation in the disclosure of their T2DM condition to kin and non-kin networks as a strategy to *living with it*. The decision to *avoid disclosure* is a self-regulatory action that is influenced by the cultural implications of lived experiences in their management of T2DM.

Setting goals to manage their T2DM should be viewed through the lens of the lived experiences of these individuals. For example, the better management of T2DM in

the UK as compared to in WA was discussed. It was further narrated that several of their peers living with T2DM in WA have lost their lives or have major complications because of their condition. Hence, as a result of being influenced by their lived experiences, their set goals in T2DM management might not be as ambitious as the general population in the UK which will further reduce their self-regulatory efforts. This finding highlights the importance of lived experience in understanding the social cognitive theory in relation to T2DM management among WAs. The goals that are set based on their lived experiences determine the strategies that are adapted to manage their T2DM. An issue with this explanation of *living with it* might come from understanding the influence of healthcare recommendations. This finding does not suggest that participants base their T2DM management strategies solely on the lived experiences, as it will be contrary to the *striving to adapt* category from this study. However, the impact of lived experiences on strategies adapted to manage T2DM cannot be ignored. Like lived experiences, there is the impact of the environmental contribution to management.

7.5 Environmental Contribution to Type 2 Diabetes Mellitus Management

The third objective of this study is concerned with understanding the contribution of change in environment on the management of T2DM in this population. The impact of environmental contribution can be described as a form of acculturation among the West African population. Acculturation is explained as the merging of cultures after prolonged contact between individuals and groups with different cultures (Sam and Berry 2010). There have been reported benefits and adverse effects of acculturation on immigrants' health and behaviours (Gerber et al. 2012). In this context, immigrants' culture is influenced by the resident country's culture as a result of prolonged interaction. These cultural influences mainly affect the lifestyle choices of immigrants, which also contribute, to the ways of managing their T2DM. In this study, there were aspects of lifestyle such as dietary habits and physical activity choices that are because of the environmental impact.

Osei-Kwasi et al. (2017) reported the impact of migration on the dietary pattern of WAs living in the UK. This study reported the impact of dietary acculturation. Although there is a strong influence of lived experiences prior to migration in the

management of T2DM, change of environment also contributes to the choices made in T2DM management. The environmental influence, which also contributes to the strategies that are adapted to managing T2DM, needs to be explored (Dendup et al. 2018). Studies have argued the impact of the adoption of Western diets and lifestyle has affected the prevalence of T2DM (Yudkin and Montori 2014). This is due to the high caloric content and highly processed foods and fats, which contribute to an unhealthy lifestyle. Younger participants seem to acknowledge the influence of Western culture more than older participants. The impact of acculturation has been reported to be higher among younger immigrants and second-generation immigrants than the older generation and first-generation immigrants (Christmas and Barker 2014; Yingfeng et al 2012). Although, participants in this study are first generation migrants from WA, this might explain why older participants in this study hold their traditional diets and lifestyle closely. Adapting to the new is more challenging for these individuals.

Another aspect of dietary habit that is influenced by environmental change due to migration include eating out, fast food consumption, which is more practised in the UK than in WA. A study has highlighted the influence of migration on dietary change, which is more common among young immigrants, than older immigrants (Paxton et al. 2016). In the study, there was a report of eating fewer fresh fruits and vegetables due to cost and availability than in WA (Paxton et al. 2016). This is similar to the findings from this study as reported by participants; there is a need to support these individuals in making healthy dietary choices accessible for optimal T2DM management. The cost implication for the optimal management of T2DM was discussed in this study. Participants especially male highlighted the cost of healthy eating and affordability of gym membership for physical activity as a barrier to T2DM management. This relates to the low economic status of most individuals in this population. Already this population has been reported to be among low social class within the society with 35% at risk of poverty (Pemberton et al. 2014). This means management choices that participants make are influenced by their socioeconomic status. In this study, the report of the cost of the healthy dietary pattern was more prominent among individuals that are employed and unemployed individuals below retirement age. In most cases, they are the breadwinner for their immediate and in some cases extended families in WA. In terms of support, although these individuals are within the employable bracket, they struggle financially which impact on their

management of T2DM. Those that are older and retired were less concerned about the cost of healthy diets in the UK. This might be explained due to the pension payments that retired individuals get from the government. Retired individuals are not the breadwinner of their house which might make them financially less constraint. Living in a different environment contributes to the management of T2DM among the participants. In this study, it was found that the use of healthcare facilities was reported to have increased unlike in WA. Although studies have reported low use of healthcare services by immigrant and minority populations (Sarria-Santamera et al. 2016; Graetz et al. 2017), this study found reports of a better use of healthcare services among participants. Reports of better access to healthcare services in the UK than in WA can be the motivating factor in the reported increased use of healthcare services.

According to Peirce (1974 p.36) "*We turn our recollection of observed facts; we endeavour so to rearrange them to view them in such perspectives that the unexpected experiences shall no longer appear surprising*". A new perspective is only witnessed after previous observation and experiences, which rearrange views and perspectives. The experiences of participants that involved poorer management of T2DM in WA can influence their report of better management in the UK. This emphasises that, although they reported improvement in their management of T2DM, this might be due to their previous experiences of managing T2DM in WA which is more challenging due to limited resources and facilities. Similar to the findings in this study, a study reported higher or similar use of healthcare services when the self-reported survey was administered to compare health service access among immigrants and the general population. However, lower use was reported when hospital registries and administrative data were analysed (Sarria-Santamera 2016). Some barriers such as trust, language barrier, immigration status, failure to accommodate cultural diversity are implicated as the cause for the lower use of healthcare services among immigrant populations (Graetz et al. 2017). Although participants in this study reported increased use of healthcare services, there were discussions of lack of healthcare cultural diversity, which influenced their experiences of healthcare use in the UK.

Another aspect that is influenced by changes in the environment as affecting T2DM management is the reduced physical activity level since migration. The influence of environmental change is important in the level of physical activity these individuals

undergo. Studies have reported that acculturation benefits in improving physical activity among immigrant populations (Tang et al. 2015; Wieland et al. 2015). However, this improvement is mostly more pronounced among young immigrants while older immigrants reported less physical activity. In support of this finding, studies have reported that immigrant groups in Western countries undertake lower levels of leisure physical activity, they are less likely to meet the weekly recommendations and differences are more pronounced among women for minority groups (Jönsson et al. 2012; Sagatun et al. 2008).

Furthermore, a study assessed the levels of physical activity in 22 West African countries (Guthold et al. 2011). It found that more than 83.8% men and 75.7% of women met the WHO physical activity recommendations of at least 150minutes of moderate activity per week. The study assessed physical activity level by assessing days and duration of physical activity at work, as a means of transportation and during leisure times per week. The contribution of work was reported to be more than 48.6%, transportation followed with 46.3% and the lowest was leisure time with 5.1%. The findings from the study can be used to explain the findings of this study. WAls migrate from an environment where majority of physical activity is derived from vigorous and moderate work-related activities and from transportation to the UK with limited access to such work-related activities. Unlike in WA, leisure physical activity is more prominent than work and transportation as forms of physical activity in the UK. The use of leisure physical activity is reported to be essential in meeting the physical activity recommendations in the UK (Higgerson et al. 2018). As the impact of changes in environment limits physical activity of WAls, there is a need for public health promotional approach to supporting these individuals by exploring how work-related physical activity can be harnessed to improve their physical activity level. Figure 7.1 presents exploration of migration effect on T2DM among immigrants.

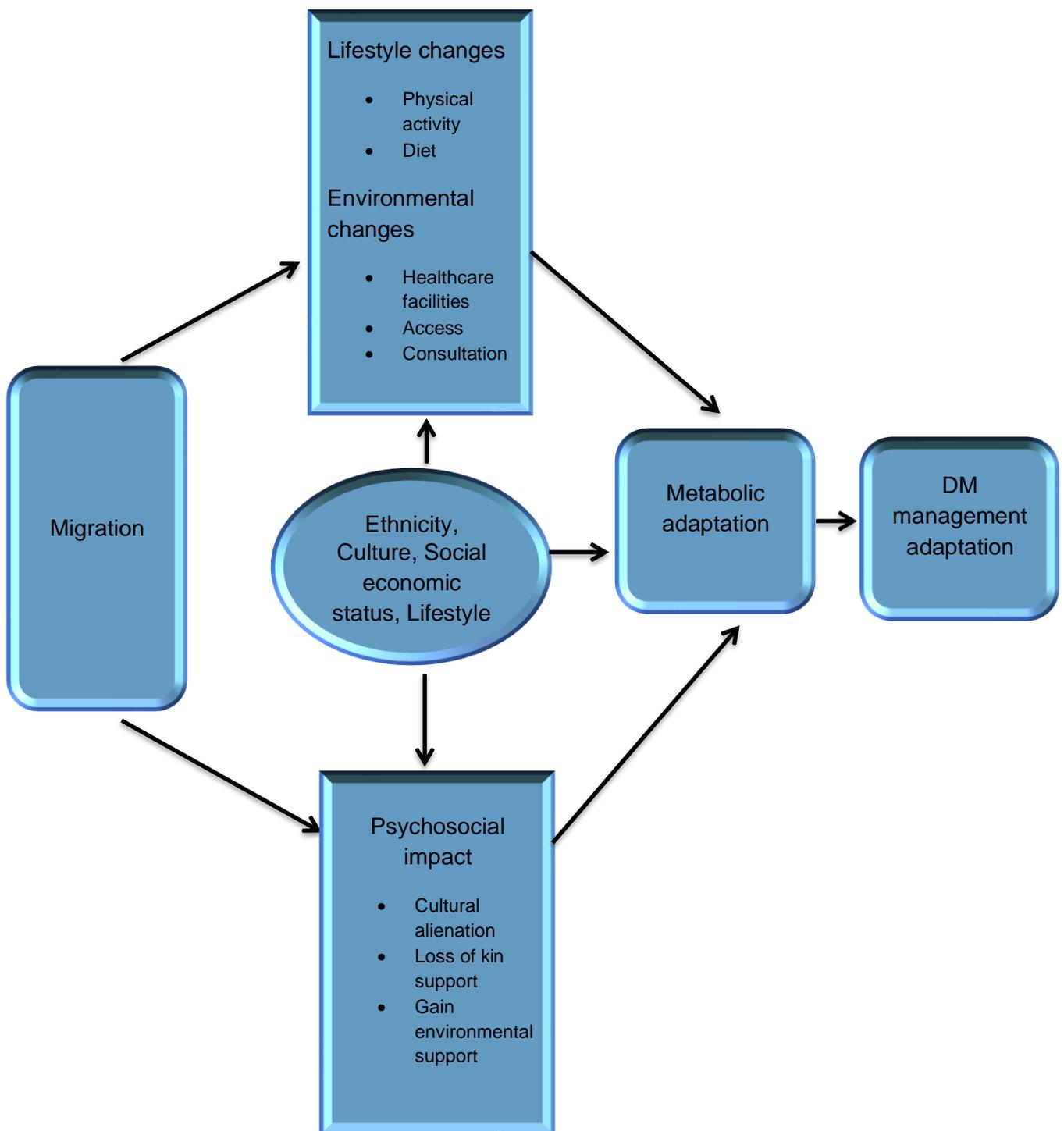


Figure 7-1 Effect of Migration on Type 2 Diabetes Mellitus Management
Adapted and Modified from Misra and Ganda (2007).

7.6 Cultural Influence on Type 2 Diabetes Mellitus Management

This aspect focuses on addressing the fourth objective of this study. As highlighted in Figure 7.1, culture is seen as an important aspect that relates to the relationship of different aspects of this study. Throughout the findings of this study, cultural influence has been emphasised by participants. Culture was defined as the fundamental system of organisation of individuals that is designed to ensure survival, provide common ways to find meaning and purpose of life (Kagawa-Singer 2011). The cultural system encompasses the beliefs, values and lifestyle used in successfully adapting to the environment. In the Lancet commission for culture on health, culture was defined as the “*conventional understandings, manifest in act and artefact*” (Napier et al. 2014). Culture is seen to go beyond shared beliefs and understandings but includes the practices due to those beliefs and understandings (Williams 2014; Oleribe and Alasia 2006). In this sense, culture can span beyond ethnicity or racial heritage. However, racial and ethnic relations of individuals can enhance commonalities of shared beliefs and understandings. Culture is an essential part of the way of life as it shapes the beliefs, understanding, practices and acts of individuals or groups of individuals. These attributes of culture can determine the survival of individuals, which highlights the importance of culture in every aspect of human life.

In respect to this study, cultural influence was a prominent part of beliefs, understandings, practices and acts of participants. The shared commonalities of these attributes were emphasised due to the ethnicity of individuals in the study originating from WA. Several aspects of shared cultural experiences influence T2DM management of WAIs.

Culturally in WA, people delay healthcare use until it is unavoidable before presenting for medical interventions. Late presentation for antenatal appointments has been reported among pregnant women in the region (Ndidi and Oseremen 2010; Adekanle and Isawumi 2008). Another study has reported the preferred use of traditional African healers as hospitals can be assumed as the last resort (Chukwuneke et al. 2012). This might in context be because of counterfeit medications, unqualified healthcare professionals and general shortcomings of medical practices in WA, which diminishes their beliefs in Western medical practices (Benedict 2014). Beliefs such as disease are divine judgements on how God wants

things to turn out; diseases as consequences of ancestral action can also influence use of healthcare services (Napier et al. 2014). These beliefs can inform the decisions and acts taken in managing long-term diseases like T2DM (Elliott et al. 2016; Rushforth et al. 2016). For example, a participant in this study narrated how a friend living with T2DM went to church to pray away his condition and was directed not to take prescribed medications, which later resulted in his death from T2DM complications. This is mainly because of cultural beliefs that God can take away any health issues. Furthermore, the cultural beliefs of individuals' impact on their decisions and actions are taken concerning their T2DM condition. This highlights the importance of understanding the perception, beliefs of individuals about their health condition (Kahissay et al. 2017; Marmarà et al. 2017; Petrie et al. 2007). This is because the actions/ strategies that are undertaken in relation to T2DM management are influenced by the perception and beliefs as explained above.

Differences in cultural settings within each society also influence the management of T2DM as found in this study. In WA, the practice of collectivism is prominent in societies; this explains the collectivist influence of societal norms and practices in the perception of WAIs towards the management of T2DM. While in the UK, the individualistic nature of the UK society encourages lone/individual management of T2DM. In changing environment from WA to the UK, the change in culturally collective society to an individualistic society can be challenging to adapt to living. The transition from a collectivist to an individualistic society can be challenging for WAIs due to differences in the cultural dynamic of both societies. This can be complicated because of living with T2DM. For this study, the impact of collective society norms was noted to affect T2DM management. This is because there is a reduction in kin support in the UK unlike what participants are used to having in WA. The individualistic society of the UK is reflected in the availability of organised non-kin support system in the form of support groups but limited kin support network. Culture is not good or bad as the influence of it can enhance or hinder the management process (Baig et al. 2015). However, understanding the dynamics of cultural influences on health can contribute to better supporting these individuals to achieve better management of T2DM. As found in this study, the impact of culture was seen in all aspects of T2DM management among WAIs. The actions, beliefs and lived experiences of these individuals are influenced by their culture, which invariably determines their willingness to adapt to changes required to manage

T2DM in the UK. Culture influences what is known to be normal, which was found to be important to participants in this study.

7.7 How Normality: Adapting to New Expands Type 2 Diabetes Mellitus Management

This aspect of this study further addresses the fifth objective, which is to provide a theoretical explanation for the management of T2DM among West African population in the UK. After the analysis of responses from participants' interviews, a core category emerged from the analysis. This is the *Normality: adapting to new* which is concerned about the changes that participants experience after migration to the UK. These changes affect their "normal" both positively and negatively. Adapting to new normal in the UK is a major finding in this study. This is discussed further based on participants' qualitative responses, observations and the literature where appropriate. To my knowledge, this is the first study to investigate T2DM management among WAIs living in the UK with the focus of generating a theoretical explanation for the process.

The main process experienced by participants in this study was "*Normality: Adapting to new*". Lifestyle prior to migration was viewed as normal particularly before diagnosis with T2DM, which was discussed by participants as the natural way of living within their environmental context. The term "Normal" is explained to not have set definition because of its unstable use over time due to change in consensus, social legitimacy in classification, trait conformity and negative bias (Segura 2015). In this study, the concept of Normality was defined as the acceptable ways of living within the community. As explained adaptation is the extent to which an individual is capable of self-regulating in response to event (s) that have moved them from equilibrium which can be as a result of unfamiliar, complex and ill-defined problems (Savickas and Porfeli 2012). Returning to equilibrium after events that move people from equilibrium is dependent on the strategies that are adopted in efforts to return to equilibrium. Returning to normality can be difficult for individuals after experiences that move them away from previous normal (Way 2012). In relation to the findings from this study, the process of migration from WA to the UK can be viewed as the event that moved these individuals away from their equilibrium while WAIs struggle to adapt to the new normal by developing strategies to find their balance. In terms of

returning to their equilibrium, *living with it* highlights the strategies used to return to equilibrium, which is adapting to a new normality.

The ability of an individual to adapt to new tasks, challenges, and roles is directly related to their perception and interpretation of the situation (Ployhart and Bliese 2006). This can be viewed in terms of the willingness of individuals to adapt to their new challenges of lifestyle recommendations in managing T2DM in the UK. The perceptions of these individuals play important roles in goal settings in relation to their health and wellbeing.

7.8 Perception of Health and Wellbeing

An important finding from this study is the perception of individuals interviewed of their health. It was gathered that participants narrated having better health since migration to the UK than living in WA. This has been discussed under all identified categories in this study. The accessibility to healthcare services, free and genuine medications and organised support programmes are among positive aspects reported to living with T2DM in the UK (Beck et al. 2018; Gu et al. 2017; Millett et al. 2007).

The impact of this on their health is greatly acknowledged in this study. Participants were more satisfied with these aspects of their T2DM management. Although some are living with complications because of their T2DM condition, they still talked about how the environment is better for managing T2DM than what they experienced in WA (see Section 5.4.3). Similarly, participants diagnosed in the UK also reported confidence in the healthcare system, relating this to challenges that they faced in accessing healthcare in WA. The popularity of counterfeit medications and substandard healthcare services in WA are part of reasons for these preferences (see Section 7.6). Following the perception of improved health and wellbeing among participants in this study, positive aspects of environmental influence on the management of T2DM in the UK were reported. Although, clinical evidence shows African immigrants are more likely to develop T2DM and risk complications due to poorer management (Alloh et al. 2019a; Meeks and Agyemang 2018; Venters and Gany 2011). This study found the participants self-reported improvement in their health in the UK, especially when compared to living in Africa or how it might have been if they were still living in WA.

This is similar to the recent ONS (2018) publication on health and wellbeing survey results among immigrants (see Table 7.1). The survey found no significant difference in the self-reported health and wellbeing of WAIs and the UK general population. Key measures used were life satisfaction, worthwhile, happiness and anxiety all by country of birth (ONS 2018). These four personal wellbeing questions were used to understand the wellbeing of individuals based on their country of origin. Findings from the survey showed that immigrants rated their well-being as high and similar to the well-being of indigenes. This interesting finding requires further exploration of how immigrants perceive their health in Western countries such as the UK.

Country	Life satisfaction	Worthwhile	Happiness	Anxiety
Average	7.65	7.85	7.48	2.86
United Kingdom	7.65	7.85	7.47	2.85
Cameroon	7.05	7.40	7.48	3.06
Ghana	7.15	7.65	7.31	2.86
Nigeria	7.36	7.83	7.45	3.00
The Gambia	7.84	7.91	7.62	Unavailable

Table 7-1 Personal Well-Being of West-African Immigrants and General Population in the UK

Adapted from ONS Annual Population Survey (2018).

7.9 Concept of Wellbeing and Quality of Life

Following the findings of the ONS survey with high perceptions of wellbeing elements (see Table 7.1), there is a need for further exploration of wellbeing in relation to T2DM management among WAs. Good quality of life is the same as living a life of quality. Patrick and Erickson (1993) defined QoL related to health as “the value assigned to duration of life as modified by impairments, functional states, perceptions and social opportunities that are influenced by diseases, injury, treatment or policy”. In addition, QoL is dependent on an individual’s perception of their position in life which is mainly influenced by the value of system they relate to, standard of the society they live in, the cultural and goals they follow (Salehi et al. 2015). QoL has both subjective and objective components (Camfield and Skevington 2008). However, focusing on the subjective aspect of QoL is dependent on what each individual attribute to it as their meaning, although similarities can be noted among individuals belonging to a similar culture.

Wellbeing can be defined as the subjective perception of wellbeing in physical, mental and social domains of health (Karimi and Brazier 2016). Wellbeing and QoL are related to cultural attributes of the individual as affected by the perception of individuals. It, therefore, means that QoL perception is dependent on the culture of the individual, which influences their perception of QoL due to the subjective of the concept.

QoL is further influenced by the person’s lived experience (Megari 2013). This implies that what composes QoL in western society might be different for immigrant population. The difference is in the dimension of what composes QoL and what each individual group means. Wellbeing, satisfaction with life, happiness and meaning in life are some of the integrative aspects of QoL. People might subjectively offer insight into their QoL that is influenced by objectively external factors of life. Life satisfaction is usually less fulfilled than their state of wellbeing, which indicates that there is always something to disgruntle about. Being satisfied is defined as having the feeling that life is the way it should be, expectations, needs and desires are met in the surrounding environment (Prasoon and Chaturvedi 2016). Preference theory formulates that the good life lies in seeing one’s wishes come through which give satisfaction in this regard. This highlights the subjective nature of satisfaction. The perception of better QoL reported in this study is an outcome of being more satisfied

with life in the UK than when living in WA. This might not be objectively better, however, the report from participants concerning this present different perception of their life.

Happiness is another measure of QoL that is very subjective in meaning and perception. Happiness is a special feeling that is not easily attained or objectively quantifiable. It is as a concept linked to human nature; it comes when people are in extraordinary harmony with their nature (Delle Fave et al. 2016). Ventegodt et al. (2003) suggest that happiness is associated with non-rational dimensions such as love, friendship and nature but not a state of health, money or other objective factors. However, this might not be completely true. Although these objective factors are not dimensions of happiness, they can impact the intensity of happiness. The participants in this study expressed their happiness towards the improved state of health that they perceive to have experienced in the UK.

Ventegodt et al. (2003) presented an integrative QoL that encompasses other factual theories that explain QoL in a subjective-existential-objective spectrum. Harnessing the nature or existential depths of life into health and social sciences was advocated as a necessary step forward. In this study, it was found that participants generally talked positively about their QoL as a contribution of the environment they live in (UK). This highlights the argument concerning impact of objective QoL. Although objective QoL might not influence some subjective QoL, it can contribute to the intensity of subjective QoL. In this study, it was noted that in terms of objective QoL (state of health) of participants might not be viewed as optimal due to their relatively poor management of T2DM. They, however, self-reported their QoL to be better and somewhat satisfactory which is similar to the ONS (2018) survey findings among WAIs (Table 7. 1).

Humans are the co-created histories of who they are becoming at the moment (Parse 2003). The change of QoL to the construct of living quality flows from the human becoming paradigm (Parse 2013). Living with chronic disease impacts on the life of the affected individual (van Houtum et al. 2015; Megari 2013). This can affect the earlier taken-for-granted assumptions about a functioning body by interrupting a person's daily life and undermining their sense of self and identity (Charmaz 1995). The influence of beliefs, images and future expectations (whom they are becoming) becomes important. The goals that people have for their future expectations are greatly impacted by their beliefs, perceptions and sense of self.

Several ways of living with chronic illnesses include ignoring it, minimizing it, struggling against it, reconciling with it, adapting to it and embracing it (Charmaz 1995). Adapting to it is one important mode of living with chronic illness; this has been explained in section 7.7 on how it influences T2DM management among WAIs. Although poor health behaviours may be a consequence of poor adaptation, this might not necessarily, reflect on the perception of the QoL, goal setting and future expectations (Ventegodt et al. 2003). This is because the expectations of WAIs might have been met or even surpassed in terms of living with T2DM in the UK, which is reflected in their perception, goal setting and future expectations.

The findings of this study on normality and the management strategies adapted are reflections of their desire not to lose their normality, which is influenced by their lived experiences prior to migration. Although their adaptation might not be objectively classified as progress towards optimal T2DM management, they perceive their QoL to be better due to their lived experiences before migration. It is, therefore, one, important to view adaptation as an ongoing process. Two, separate this from the desired outcome of the process of T2DM management. Three, understand the influence of lived experiences in normality, which affects adaption to T2DM management in the UK. Although policies and interventions for T2DM management have been presented (See section 2.6.1), there is a lack of cultural perspectives in implementation of such policies among ethnic groups in the UK. For example, there is an overlooked aspect of immigrants such as black and ethnic minorities where total cholesterol levels can be often lower (Alloh et al. 2019a). There has been criticism of research on inadequate health policy on minority ethnic groups (Jayaweera 2014; Hunter et al. 2010). There is a need to formulate policies that go beyond deprived individuals to ethnic minority population. There is a need to consider the unique challenges of T2DM management and their desired outcomes concerning adaptation among WAIs living in the UK.

7.10 Chapter Summary

In this discussion chapter, I have provided explanations on the role of lived experiences prior to migration to the UK in the management of T2DM. The principal categories of *striving to adapt*, *finding out* and *living with it* were explored on how they feed into the core category of *normality: Adapting to new* which explained the

different ways WAs in the UK view their T2DM management process. The rationale for this study stemmed from the paucity of research in the area of T2DM management among WAs. This study adds to research in providing insight into the management of T2DM, better understanding the process that takes place, the impact of lived experience and culture in the beliefs, perception and actions relating to managing T2DM among WAs. It also highlights their perception of needs to be fulfilled and the strategies that are employed to meeting these needs. The importance of coordinating the management of T2DM to include background beliefs and perceptions concerning health was discussed in assisting healthcare professionals to get better support for WAs. The next chapter (Chapter 8) presents the concluding part of this study which focuses on the conclusion, recommendations, and implications for future research.

Chapter 8 **Contributions, Recommendations and Limitations**

8.1 Introduction

This chapter concludes the key findings of this study. It presents the study's contribution to knowledge, recommendations based on the findings and future research areas. The aim of this study was to explore the experiences of WAIs in managing T2DM in the UK. This is done to understand the contributions of migration on lifestyle management of T2DM while living in the UK. In order to understand the experiences of individuals in this study, a CGT approach was found suitable for achieving the aims and objectives of this study. The research cycle is presented to show the direction of the research from the research question and objectives to carrying out the study which then returns to the research question for conclusion of the process (Figure 8.1).

Using constant comparison application method of analysis, the emergence of core category was identified "*Normality: Adapting to new*" which has three main categories of *finding out, striving to be healthy and living with it*. These three principal categories were found to be the cause, consequence and strategies of managing T2DM. Interesting and unexpected findings emerged from the interviews with participants in carrying out this study. It was gathered that WAIs face challenges in adapting to the management recommendations by healthcare professionals concerning T2DM. Those challenges can be understood as influences of their lived experiences prior to migration. This seems to impact boldly on goal setting, actions and desired outcomes that WAIs strive to achieve in relation to T2DM management. Although striving to overcome challenges was discussed in this study, in general, participants believe their T2DM management has improved in the UK. The sense of appreciation for improved societal measures in place to support people in managing T2DM is reflected in the context from which *Normality: adapting to new* emerged. Although, migration to a different environment requires adapting to new challenges, keeping their normality was paramount for participants in this study. Reports on the impact of environmental change on the health of immigrants have been presented (Gushulak and MacPherson 2006).

At the planning stage of this study looking into the literature, it was noted that various studies have shown poor T2DM management among immigrant populations (Alloh et al. 2019a). Qualitative findings showed that this population seek medical diagnosis late in their T2DM journey (Kindara et al. 2017: Kahn et al. 2013: Brämberg et al. 2012: Kohinor et al. 2011: Wallin et al. 2007). Similarly, quantitative articles reported poorer management of T2DM among minority groups than the White population (Bijlholt et al. 2018: Snijder et al. 2017: Ballotari et al. 2015: Choukem et al. 2014: Fosse-Edorh et al. 2014: Abubakari et al. 2013: James et al. 2012: Wieland et al. 2012: Verma et al. 2010). These studies, however, recruited mixed populations in terms of “Blacks”. These studies were found to have combination of African Americans, African immigrants, Afro-Caribbean as Black population (Bijlholt et al. 2018: Snijder et al. 2017: Choukem et al. 2014: Fosse-Edorh et al. 2014: James et al. 2012: Wieland et al. 2012: Verma et al. 2010). There was an inherent issue in the studies due to the heterogeneity of the Black population. Studies have already highlighted the need to separate Africans in research from Black-Caribbean and African Americans due to the heterogeneity of the “Black” group (Commodore-Manser 2015: Agyemang 2005). The gap noted as a result of this group combination in these studies has been reported in the review chapter (see Section 2.10) of this thesis. This thesis was designed to address this gap by recruiting only WAIs to allow exploration of concerns that are specific to them. It was decided that an exploratory CGT methodology would allow for delving into the reasons for the poorer management of T2DM and the late presentation of diagnosis among African immigrants in the UK.

The focus on WAIs in this study is to allow for the emergence of a unique theory that is based on the experiences of participants from this population. One reason for the focus on WA is the established presence of an immigrant population from this region in the UK, which makes them one of the fastest growing populations in the UK (Goff et al. 2015: ONS 2015). In addition, Africa is the second largest continent in the world with more than 50 countries. Having a study that will contribute substantially to knowledge for immigrants from the continent requires a systematic decision to focus on a smaller region of the continent.

Although there is evidence of poor T2DM management outcomes among people from this group, research has not explored their concerns of living with T2DM and how this relates to T2DM management experiences in WA. I believe that improving

T2DM management among this population will require going beyond having systems in place to support them especially in terms of clinical care of management. The importance of lifestyle contribution cannot be downplayed. Studies have shown the importance of lifestyle choices in T2DM management (ADA 2018: Chong et al. 2017). In addition, exploring the important lived experiences and influence on the management processes of this population is paramount to better management. Furthermore, understanding perceptions of the WAIs to living with T2DM can contribute to highlighting areas that need to be focused on when designing interventions for improving T2DM management for this population. This is particularly important for the WHO's aims of Sustainable Development Goals (SDGs) as relating to goal no 3 of achieving good health and well-being for all individuals (Chapman 2016). Achieving one-third reduction in premature mortality in non-communicable diseases such as T2DM through prevention and treatment for the promotion of mental health and wellbeing requires optimal management programme for all individuals. This is one of the many aspects of how this study can contribute to knowledge.

In addition, there was no study has presented theoretical explanation for the management of T2DM among WAIs. This is needed to move beyond identifying factors that influence T2DM management to explore the relationship between these factors and the management of T2DM among this population. A more in-depth approach to holistic components of managing T2DM from experiences of WAIs living with T2DM after they have migrated from a low-income country to high-income country is needed.

It was noted that the need for proper management of T2DM among this population cannot be addressed without a qualitative approach into exploration of experiences of living with T2DM, encompassing lifestyle and quality of life discussions. It has been argued that exploring the quality of life can offer better health information for health practitioners to understand individual needs and how to address them (Janodia 2016: Kaplan 2003). It is presented in this study that without the knowledge of experiences of people that are living with T2DM and their concerns, interventions to support these people might not be adequately utilised. This was evidenced when the perceived needs of participants in this study were compared to the literature. The literature reviewed reported poorer T2DM management outcomes among Black-Africans compared to Whites and South Asian populations (Alloh et al. 2019a).

However, in conducting this study, participants have perceptions of better T2DM management in the UK. This was an unexpected finding based on the review of the literature, hence the importance of exploring the experiences of WAIs.

By exploring experiences of WAIs various reasons why these individuals seek medical intervention late, their health beliefs, the contribution of migration on management and lifestyle factors have been uncovered. Furthermore, the effect of T2DM on their health and perception of the QoL, coping strategies to adjusting to the new normal and their support needs are better understood from their narrations.

In relation to adopting an appropriate methodology for exploring the experiences of T2DM management among WAIs, CGT was found to be suitable. Although studies have been conducted on using GT to explore the management of T2DM, no study has been conducted using CGT to explore T2DM management among WAIs living in the UK. The findings from this study have lots of implications for public health practices and policies in relation to immigrants' health. These implications are discussed under the recommendation section of this chapter (see Section 8.7).

Using CGT in this study of Normality: Adapting to new and its three related categories allow for highlighting the difficulties and problems associated with T2DM management. In addition, it uncovers strategies that participants employ to overcome the problems associated with living with T2DM and available supports in the UK.

The findings from this study were exploratory as new knowledge have been presented. This has significant revelations and implications for governmental agencies in addressing some of the concerns that emerged from this study. For research communities, this study will serve as a benchmark against which other studies that will further explore T2DM management among individuals living with T2DM can be measured.

The theory of this study comprises of participants' concerns of changes experienced due to managing their T2DM in the UK. Cultural and religious influences in moderating their attitudes and beliefs towards managing their T2DM were related to what they know to be "normal" to them. An interesting aspect of cultural influence is the lived experiences of these individuals before migrating to the UK. The lived experiences served as a reference point for their management progress. Participants in this study use their experiences of finding out about their T2DM and its management in WA to measure their progress of managing T2DM in the UK.

Although not all participants were diagnosed in WA, the influence of lived experiences as a measure of T2DM management progress was also noted among participants diagnosed in the UK.

How the lived experiences which are known as the “Normality” influences their T2DM management has been presented in chapter 6. Normality was noted to be related to familiar dietary habits and physical activity and ways of living in general. These aspects presented challenges in terms of management of T2DM. Dietary habits were discussed as a way of socialising, identity and tradition, which was found difficult to adjust to the new recommendations of dietary habits in managing T2DM in the UK. Immigrants have reported some of these challenges in maintaining traditional dietary habits (Mbombo-Dweba et al. 2017: Paxton et al. 2016). In addition, adjusting to the environmental impact of physical activity was also found to be concerning. Lower levels of physical activity were reported among participants in this study. Similar findings have been presented in studies among immigrants (Tang et al. 2015: Wieland et al. 2015: Jonsson et al. 2013).

This study found that the challenges to meeting the recommended level of physical activity are due to the structural influence of environment on promoting less mandatory physical activity and more leisure physical activity. Adjusting to these changes was difficult due to their lived experiences in WA where more mandatory physical activity is encouraged than leisure physical activity. Positively, the access to healthcare, free healthcare and genuine medication provisions were perceived as consequences of migrating to a developed country.

Below this introduction section of this chapter draws together the findings in relation to important areas of the study. First, the quality of the study is presented with specific criteria of originality, credibility, resonance and usefulness following Charmaz (2006) suggestion for a CGT study. Second, key findings were presented providing a basis for applications and recommendations for practice and future research. Third, the study’s limitations are presented and acknowledged in relation to the study design, data collections and decisions made in carrying out the study. This chapter concludes with summary of the chapter findings.

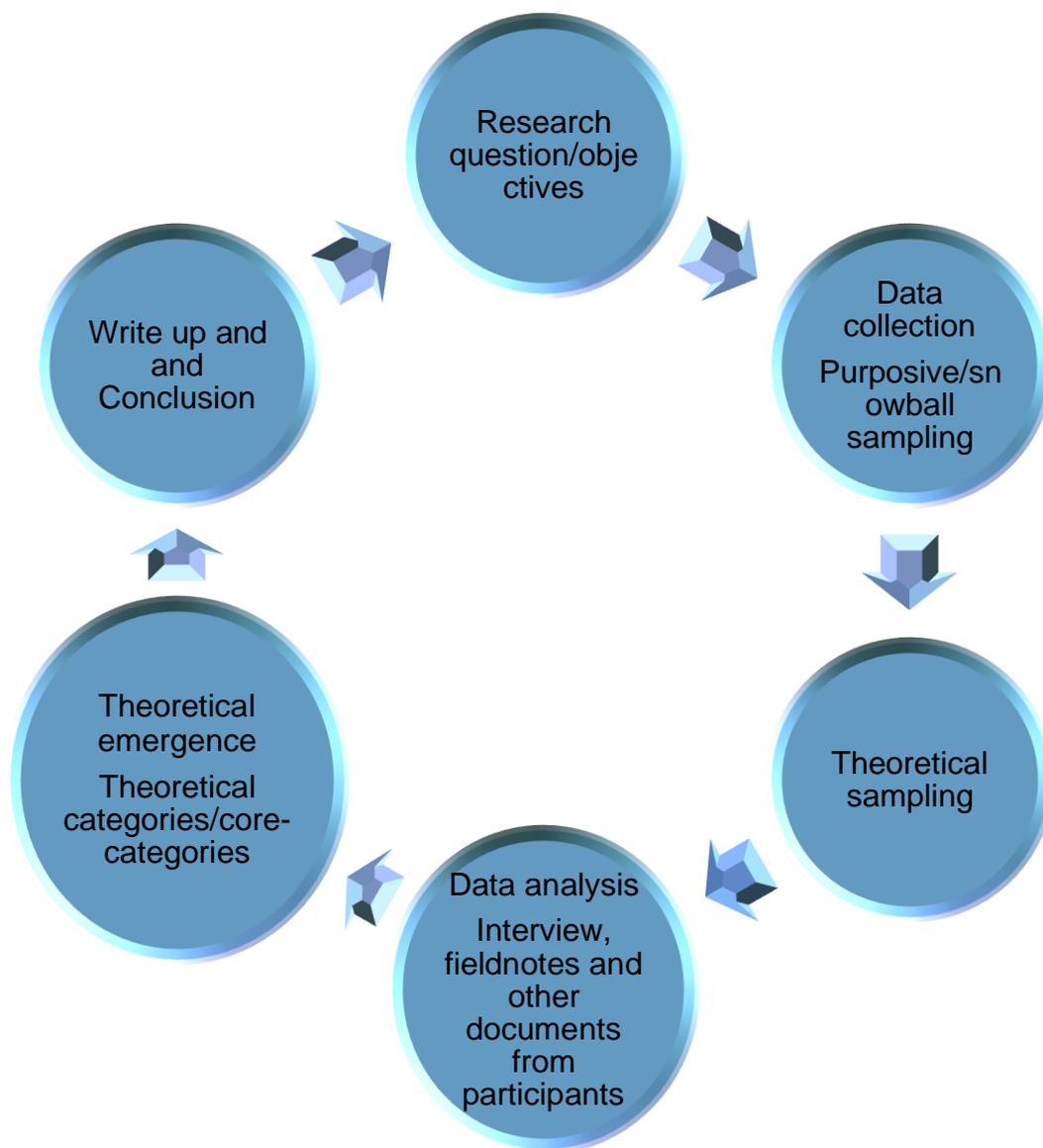


Figure 8-1 Research Cycle

8.2 Meeting Grounded Theory Criteria

There are several criteria outlined for CGT research by Charmaz (2006, p182). These guide the usefulness and quality of a GT study. Although there are several standards and criteria for qualitative research, the five outlined by Charmaz were followed in this study. It is acknowledged that the readers are the ultimate judge of the usefulness of a study. It is, however, valuable to discuss the criteria that the researcher has followed to meet the methodology criteria. Quality, Credibility, Originality, Usefulness and Resonance were discussed and how this study meets these criteria.

8.2.1 Quality

Quality of scientific research is an important aspect of a study. The rigour shows the worth of empirical research. This is however different for qualitative research where there is a contested lack of generalisability and objective measures (Carminati 2018; Noble and Smith 2015). Although there have been arguments of how this is a paradigm philosophy and not a methodology weakness, it is acknowledged that each research field has its own knowledge assumptions about the world and how it is understood (Leung 2015). It is therefore not necessary to apply positivist criteria such as reliability, validity and transferability to an interpretivist research (Golafshani 2003).

Qualitative paradigm accepts that the ontological position of research influences its epistemic claims and decisions. In following this line of argument, this study adopted a CGT approach. Constructivism is based upon philosophical assumptions that believe in reflection on lived experiences, we can construct an understanding of the world we live in (McLeod 2014). To determine the scientific rigour of this study, Charmaz's (2006) specific criteria of originality, credibility, resonance and usefulness were used to appraise the quality. Charmaz (2006) acknowledges that through detailed combination of originality and credibility can the resonance and usefulness of a study be enhanced. Therefore, transparency and trustworthiness are important to identify the application of such study in practice (Patton 1999). The sections below provide ways in which this study has met the originality, credibility, resonance and usefulness criteria.

8.2.2 Originality

In Chapter 2 the limited social science researches that have been carried out on T2DM management among WAs using exploratory approach was identified. Furthermore, studies that do exist recruit 'black' immigrants, which can be too generalising due to the heterogeneity of the people that make up the Black race. This is worrying as in the UK context; Black-Africans differ significantly from Black-Caribbean because of years of migration and their integration into the UK society. Combining these groups as one group in a study can mask important issues specific to each group concerning the management of T2DM. This is particularly important due to the influence and contribution of lifestyle practices in the management of T2DM, which can be specific to each group of the population. Lifestyle practices in the management of T2DM are said to be an important component of the process (ADA 2019; Reusch and Manson 2017). This is in part why this study is original in its contribution to knowledge.

This thesis provides a new understanding of how WAs manage their T2DM with highlights on the effects of migration in their lifestyle practices. Several novel insights have been identified which were not found in the literature within the theoretical construct of this study. First, lived experiences of immigrants influence their readiness to accept healthcare professional's recommendation, which might be different from their previous experiences in WA. The differences in normality may impede the acceptance of some of the recommendations of healthcare professionals in the UK. It will be beneficial that new immigrants living with T2DM are given special interest in their acceptance of healthcare services and recommendations.

Second, the process and stage at which diagnosis is made can play an important role in the management of T2DM among this population. This aspect needs to be established by healthcare professionals especially when working with African immigrants diagnosed in WA. This is mainly because due to the late diagnosis as has been reported in this study by participants diagnosed in WA, the management regime differs as compared to participants that were diagnosed at early stages in the UK. In addition, due to the late stage of diagnosis, there was a need to intensely follow stricter management regime, which people found to be difficult to follow unlike the gradual recommended changes in management for people diagnosed early with T2DM. Third, the perception and expectations of these individuals need to be assessed and established in relation to managing T2DM. This is mainly due to the

perception of better QoL in the UK than in WA. In saying this, these individuals were less concerned to improving their progress of managing T2DM as might be expected. The accessibility of healthcare services, free healthcare services, free and authentic medications and the support groups available in the UK are some of the reasons cited for this perception. Supporting these individuals in improving their management regime might be challenging for healthcare professionals due to the perception of QoL.

Finally, the core-category provided insight into the process of management among WAs in adapting to the new. Recommendations that take account of what they see as normal will achieve better adherence from this population. This is because it will be easier for them to adapt to and follow in general. It is therefore essential that healthcare professionals discuss what normality is to these individuals, expectations and the compromises that can be made in efforts to improve their management of T2DM. Healthcare practitioners have an important role to play as agents of change that can promote and modify patients' health and risk behaviour (Wiggers & Sanson-Fisher 1994).

The findings of this thesis are of significant contribution considering the paucity of empirical evidence with the management area among this population. Findings suggest that although West African immigrants' management behaviours are deeply rooted in their previous experiences and cultural practices, they have believed in the healthcare system of the UK. Therefore, healthcare practitioners have a central role in inciting changes in management behaviours that can still accommodate their cultural needs.

8.2.3 Credibility

Credibility in research is the aspect of true value in a study. This is equivalent to internal validity in quantitative research. Several strategies can be employed to achieve credibility in qualitative research, which included: prolonged engagement, triangulation and persistent observation (Korstjens & Moser 2018). For this study, there was an opportunity to prolong engagement with participants; this was done by continuous attendance of support group sessions in London. Follow-up questions were asked to assist in the development of the theory emerging from this study. In addition, triangulation was also used in ensuring the credibility of this research

(Carter et al. 2014; Heale and Forbes 2013). This was done by using different data collection methods such as in-depth interviews, observation and field notes. One way to ensure credibility is to familiarise with data as required to warrant insight into participants' experiences of the study phenomenon and empirical observation (Charmaz 2006). This was done in the support groups as this allows an avenue for persistent observation, getting into discussions with members of the group on their T2DM management process. Observation allowed me to present a different voice for WAIs, which goes beyond their narration to describing the observed actions (Tudge and Hogan 2005, p 116). As consistent with CGT approach, the findings of this research are not the ultimate truth but my own interpretations and understandings of the narrations that participants provided (Charmaz 2014; Kayrooz and Trevitt 2004). This means that the findings of this study are not "fact" but the construction of reality. Although the constructions are viable and defensible, they are nonetheless dependent on my presentation of their narrations to readers in a meaningful way (Throne et al. 2004).

Furthermore, the narratives of participants were made explicit throughout the comparative analysis process to ensure transparent accounts. This was done in Chapter 4 (see Section two) by giving transparent accounts of analytical methods used in this study. The chapter gave examples of the systematic comparisons made within each transcript, between transcripts and the development into theoretical categories. A detailed profile of participants was given to sustain the presence of the participants' narrative in the study; thus, providing a context of WAIs in this study (see Appendix 10). This was continued through the theoretical and core categories development (Chapters 5 and 6) where the analysis was linked back to the accounts of participants to ensure the interpretations remained grounded in the participants' experiences. These were further supported with memo written in the first person to trace theoretical insights made through constant comparison processes, which facilitate dependability and reliability. The intention of this is that readers can form an independent assessment of the claims made and agree with these through the provision of sufficient evidence (Charmaz 2006, p 182). This provides a rationale for the theoretical constructs that were arrived at in the analysis. This analytical transparency was maintained throughout the analysis process, which led to the emergence of substantive *Normality: Adapting to new theory*.

8.2.4 Resonance

Resonance is concerned with the representation of the lived experiences of participants in the study (Tracy and Hinrichs 2017). Charmaz (2006) suggests resonance to be achieved when the findings of the study can make sense to the participants themselves. Resonance relates to how the responses of participants in studies were portrayed which encompasses the researcher's action to convey the lived experiences of the participants concerning the phenomenon along with explicating the covert social processes that influence their action (Charmaz 2006). Explicating the WAIs' voice was important to ensure that their perspectives were engrained in the strategies that will be recommended for improving their management of T2DM in the UK.

As stated in this thesis, the research methods adopted allow participants' narratives to develop a new insight into T2DM management (Chapter 4). Current perspectives lack these insights and there is a paucity of the literature in this area. Practice will benefit from the WAIs' perspectives in order to develop patient centred practices in the management of T2DM among this population. Deep immersion into the setting and developed sensitivity into West African immigrants' narratives allows participants to develop rapport and build trust when disclosing their stories, which heightened the researcher's sensitivity to their experiences. This further allows participants to delve further into explanations of how migrating to the UK influence their management of T2DM and the personal meanings that were formed from their experiences. Memos were written as an important aspect in identifying how the researcher directed the theoretical development process interprets meaningful narratives. The resonance criteria also relate to the extent to which the researcher understands the narratives, requiring insight into the co-construction of meanings in the identified social processes (Tracy 2010; Charmaz 2006).

Frequent engagements of WAIs within support groups and in the communities allowed discussions into the study and the research outcomes. This was useful as it heightened the awareness of WAIs to their experiences and leads to a greater understanding of their management experiences. It is important to note that the final theory was fed back to some participants by presenting findings at the support groups. Some other participants could not be reached because they stopped attending the support groups or have changed place of residence. However, this is not seen as a problem as GT approach acknowledges that theory development is a

continuum induction to deduction process (Strauss and Corbin 1998). Therefore, the theory developed in this thesis will lend itself to testing of its worth in future studies.

8.2.5 Usefulness

Usefulness is concerned with the contributions of the study to the domain of knowledge in the area that may be used by researchers, professionals and laypersons (Priya 2013). The criteria for usefulness are the extent to which the findings can contribute to the lives of the people experiencing the phenomenon and how this can lend itself to stimulating further enquiry. In the previous chapters, the process of rigorous methods used in the qualitative coding of data that led to the emergence of psychological social processes of WAIs' experiences of managing T2DM was thoroughly discussed. Theoretical categories identified *striving to adapt*, *finding out* and *living with it* as the basis for T2DM management in the UK. These formed the basis for the emergence of the core-category that led to the substantive theory of T2DM management, highlighting two distinct systems of environmental influence of WAIs' T2DM management in the UK.

8.3 Contribution to Knowledge

As indicated in the introduction chapter (Chapter 1) of this study, the aim was to address this research question. In designing this study to answer this research question, objectives were developed to answer the question. This, therefore, allows original contribution to knowledge based on the findings of this study in answering the research questions. The contribution to knowledge is essential in creating an original body of knowledge, ensuring study replication is avoided (Tracy 2017). It is therefore essential that the original contributions to knowledge are clearly identified and presented.

8.3.1 Methodological Contribution

There are several important aspects of the methodology used in this study that have significant contributions to knowledge within public health discipline and research that involves immigrants as participants. This study extends previous GT studies on immigrants by exploring some methodological fit of GT approach to research with

immigrant populations. CGT ontological position has been shown to be suitable for conducting research where WAIs are directly involved as co-constructors.

Some WAIs centred research techniques utilised in the study that served to advance knowledge and understanding are presented as follows:

1. The use of flexible research techniques acknowledges the contribution of WAIs to the development of public health knowledge. The flexible technique recognised WAIs and valued their contribution in any form they chose. Participants chose the nature and level of their participation in the research. They chose the location of interviews, if they wanted their family members in the discussion or not. Other techniques include the language that was used in the interview, the context of interview session such as interruptions, variations to interview format.
2. Conducting interviews among WAIs was not an easy research method to adopt. Practical methodological and ethical issues are important considerations (Westcott and Littleton 2005). In this study, practical methodological issues such as the busy schedule of some participants were managed by conducting interviews at any location and time suitable for participants. Follow up interviews are arranged via telephone to reduce the need for another time from their busy schedules. In addition, ethical considerations in relation to this study have been discussed (see Section 4.1.5). This includes gaining ethical consent from participants in this study, the use of gatekeepers to assist in the recruitment of participants. Ensuring ethical principles are followed while also understanding the cultural expectations from me as the researcher.
3. The recruitment of WAIs for this study is a contribution to methodological knowledge. The issues that were discussed in the recruitment of participants and how these challenges were overcome (see Chapter 4) can be used as guidelines for other researchers that will be working among minority groups such as WAIs.
4. Conducting GT research among WAIs in the UK has not been done to my knowledge prior to this study, this has highlighted methodological issues that can be valuable for other researchers. Working between methodological

guidelines and recruitment protocol among WAls in this study has contributed to both the methodology and recruitment of WAls in research.

8.3.2 Contribution to Public health knowledge

CGT methods were used to research the social world of WAls using the research question to understand the experiences of these participants. By answering the research question, this study has been able to get me closer to multiple realities encountered. From the outcomes of this study, several contributions to knowledge are presented as follows.

1. Findings in this study support what is found in the literature concerning the poor management of T2DM among WAls. The delay in diagnosis by this population because of late presentation for seeking medical attention following noticing symptoms support this notion. Indeed, this study has in addition to confirming this knowledge, it has extended knowledge by further presenting reasons for the delay in presentation for diagnosis using an exploratory approach on the issue of *finding out*.
2. This study also found useful contributions for medical professionals in the management of T2DM. This is particularly important in terms of understanding the contributions of delayed diagnosis to the management of T2DM. public health professionals in the UK working with this population need to gather detailed information on the diagnosis of T2DM among their immigrant patients. This is a pointer from this study for clinicians and policymakers about how delayed diagnosis can affect current management regimes. This revelation calls for a need to improve knowledge of healthcare professionals working with immigrant populations in dealing with individuals from developing countries such as WA.
3. The emergence of *Normality: Adapting to new* is unique in terms of its emergence due to the constant comparison method of the data until saturation was achieved. This is the first GT study that explores the experience of WAls living with T2DM on their management of the condition in the UK. The findings from this study are therefore based on the accounts of participants gathered through in-depth interviews and observation and other

data sources available. Hence the importance of Normality: adapting to the new as a core-category from this study.

4. The findings of this study have important implications for public health, beyond the direct impact of the perception of participants on the management of T2DM in the UK. Participants seem to be less concerned about their management of T2DM, particularly in relation to the clinical side of management. This is mainly related to their experiences in accessing healthcare services in WA. The implication for this finding is that these individuals perceive their QoL to have improved compared to when they were in WA. This implies that, although poor management is reported among this population, they perceive that their health has improved compared to what they experienced in WA.
5. Only a few studies that have carried out research exploring T2DM management among Black-Africans in the UK with none focusing on WAIs. The contribution of this study is extending the findings of T2DM management among immigrants in the UK beyond identifying the factors that contribute to T2DM management. By exploring their experiences, this study has been able to identify management strategies that WAIs employ to live with T2DM. This can help healthcare professionals to plan interventions in supporting WAIs to improve their T2DM management regime. The identified challenges found in this study are in line with WHO's research priority areas of socio-cultural studies (Napier et al. 2014). Therefore, the findings highlight the need for healthcare professionals and policy makers to address concerns raised in this study which extends beyond clinical management to lifestyle management of T2DM.
6. The literature on T2DM management among immigrant populations focused on the Black populations and their access to healthcare services (Ochieng 2012; Wilson et al. 2012). However, by exploring the experiences and challenges of participants, this study has been able to use a different approach to understand the management of T2DM among WAIs. Indeed, it has been able to contribute to knowledge in terms of the impact of health experiences living in WA on their current T2DM management in the UK. This has an important implication for medical professionals in working with people

from this group to know and plan interventions required in helping people understand the importance of efforts to improve their T2DM management.

7. This study further reinforces the findings on importance of lifestyle factors in the management of T2DM. By exploring the management of T2DM among participants in this study, it has added the importance of lived experiences on QoL as found in the study. Participants' perception of their QoL is greatly influenced by their lived experience before migration. It is therefore essential that medical professionals explore how to help WAIs set goals to improve their management.

Following these contributions, I have presented key messages that emerged from this study.

8.4 Key Messages from this Study

8.4.1 Message 1: Understanding that Normality is an Essential Aspect of T2DM Management among West African Immigrants Living in the UK

The findings of this study have shown the importance of getting it right working with immigrant populations in healthcare contexts. The DH guidelines highlight the criteria for healthcare professionals working with immigrant populations in the UK, which place emphasis on the need for individually tailored healthcare services (DH 2014). Having good communication, knowledge and skills to understand the concerns of individuals from this community is important in healthcare services delivery. Such expertise is essential in enabling optimal healthcare benefit for immigrant populations.

In relation to WAIs living with T2DM in the UK, the need to understand what normality is for these individuals can enable optimal management of T2DM. According to the Lancet Commission on migration (Abubakar et al. 2018), there is a need for cultural competency in working with immigrant populations in high-income countries. Part of having cultural competency is the need to understand the concerns of immigrant populations in managing their health. The need for normality in the management of T2DM among WAIs living in the UK is essential. There is a need for policies that focus on developing services that have the right people with the right skills and provide early intervention for reducing health inequality for immigrant

populations. Although there has been progress recorded in terms of immigrants' health, there are still challenges within this population.

By acknowledging that migration is a distinct phase that affects the health of immigrants and health behaviours, it is possible to extend this notion to the health behaviours of immigrants in managing their T2DM condition. Following this, the findings of this study have implications for two main areas.

First, recognising normality as a primary concern of WAIs in the management of T2DM and how healthcare services can be structured to address these concerns within T2DM management recommendations. Migration is a marked phase with significant changes experienced; learning about changes to lifestyle can have emotional and social impacts (see Section Memo 5.5). How WAIs learn to adapt to these changes is important. The findings from this study show that WAIs striving to adapt to managing T2DM in the UK is guided by their understanding of normality (see Section 6.3). How WAIs navigate these challenges is based on their lived experiences, which shape their goal setting (see Section 7.3). It will be useful following these findings if immigrant-friendly services can acknowledge the contribution of normality in shaping how these individuals adapt to managing T2DM in the UK. Holistic perspectives that promote active interaction of immigrants with healthcare professionals, along with specifically tailored services that can help meet the health needs of this population are essential (Laverack 2018).

Secondly, the findings of this thesis can contribute to health education among immigrant populations. This can be useful to empower stakeholders to support immigrants' health needs. By promoting the perspectives, insights and voices of immigrants, they can be assisted with positive management behaviours. These can be achieved as follows:

8.4.1.1 **Promotion of Perspectives**

The role of *normality* and *striving to adapt* has been shown to affect the management behaviours of immigrant populations in this study. *Normality* affects goal settings for health behaviour changes which determine the management of T2DM among this population. This therefore provides an important area for health education.

Establishing the perspectives of immigrant populations on *normality* and goal settings can be used in educating these individuals and stakeholders in the management of T2DM. The impact of *normality* on goal setting and management of

T2DM can be used to promote insights into barriers to meeting management recommendation targets. This can provide a useful avenue for promoting healthy behaviour among immigrants.

8.4.1.2 *Promoting Insights*

The findings from this thesis have shown that promoting insights of immigrants is essential for the management of T2DM. Promoting insights of immigrants in the management process can allow for issues that are beyond observed behaviours to be explored and understood. For example, the input of insight into lived experiences prior to migration can contribute to knowing how to promote health services among this population. This could be achieved when healthcare professionals target aspects of lived experiences that can contribute to managing T2DM. Such a strategy can be beneficial to empower immigrants as an active participant in their care.

8.4.1.3 *Promoting Voices*

Following the literature review findings of this thesis, it was noted that WAIs are less represented in studies. There is a need to promote the voices of these individuals in research and healthcare services in general (see Section 2.6). The marginalisation of this population in research can mask the voices and concerns of WAIs in healthcare service delivery. Recognising the concerns of individuals for this population can be used in educating them on how to overcome some of the identified challenges that may arise due to the management of T2DM. This will be useful to help immigrants constructively assert themselves when they feel their needs are not being met and promote developing their own voice for active interaction with healthcare professionals.

8.4.2 Message 2: Exploring the Lived Experiences of West African Immigrants in Recommending Management Regime

The findings of this study have highlighted the importance of lived experiences of WAIs in the management of T2DM. This aspect of WAIs needs to be given further attention from healthcare professionals. Managing T2DM goes beyond current presentations. Understanding the lived experiences of immigrants prior to migration can contribute to understanding different aspects of health behaviour of these

individuals. The impact of lived experiences in the management of T2DM can be understood in three main areas.

8.4.2.1 *The Perception of Living with Type 2 Diabetes Mellitus in the UK*

The impact of challenging changes in the management of T2DM among this population was related to lifestyle factors such as changes in dietary habits and meeting physical activity recommendations. The perception of how important these required changes are to manage T2DM determines their readiness to meet such challenges. The perception of WAIs in relation to healthy eating, increasing physical activity can influence their willingness to adapt to the required changes in the UK. In understanding the impact of lived experiences in the perception of these individuals in meeting recommended changes in the management of T2DM can help healthcare professionals support them. Formulating educational interventions to correct any wrong perception in this area can be valuable to improving T2DM management among WAIs in the UK.

8.4.2.2 *Goal Setting to Meet Changes*

Understanding the perceptions of WAIs towards the recommended changes required for managing T2DM in the UK determines the goals they set in relation to managing T2DM. From the findings of this study, it was noted that the main goal was to avoid physical complications due to living with T2DM. Participants were not concerned about optimal management and improving their blood glucose level as anticipated. This is mainly because of their experiences; T2DM management is seen to be better in the UK than in WA. Therefore, goals set are relatively lower in terms of achieving optimal T2DM management compared to the general population. This can be seen as reflected in the findings from the literature review for this study (see Section 2.6). There is a need to support WAIs in setting goals to achieving optimal management of T2DM beyond avoiding complications.

8.4.2.3 *Strategies to Meeting Set Goals*

Goals set are achieved through adapting strategies. Regarding strategies for meeting the goals set for managing T2DM, the impact of lived experiences is also noted in this area. The main concern from this study was the normality of living with T2DM. The need to maintain their normality determines the strategies that are

adopted for the management of T2DM (see Section 5.4.3). In the maintenance of normality of these individuals, the preservation of lifestyle choices becomes important. This shows that any strategy adopted to meet set goals will be influenced by lived experiences. Therefore, there is a need to support these individuals in setting goals and adopting strategies to meet such goals. The impact of healthcare professionals in this process can be valuable in achieving optimal T2DM management in general.

8.4.3 Message 3: Supporting Immigrant Patients to Set Goals

8.4.3.1 *Equipping Healthcare Professionals with Knowledge to Care for West African Immigrants*

Designing patient-tailored care is widely recommended in healthcare services for healthcare professionals (Hemingway and Bosanquet 2018; Laverack 2018). The use of this approach to care involves joint decision-making and facilitates making good health and lifestyle choices. When working with WAIs, healthcare professionals need to draw on skills and knowledge that support goal-settings for these individuals. Barriers to optimal goal setting need to be addressed in the process. This thesis suggested that an interactive approach to goal setting might be useful for the healthcare professionals to understand the strategies that WAIs adapt to managing T2DM based on the set goals. Professions such as T2DM district nurses and community health workers that draw on T2DM management literature may find the findings of this thesis more useful than clinical T2DM management professionals.

8.4.3.2 *Working with Healthcare Professionals to Set Goals*

WAIs in this study have related their preference of managing T2DM in the UK than in WA, although the literature review has highlighted the poorer management of T2DM among African immigrants than other ethnic groups (see Section 2.6). The impact of goal setting especially in a self-managed condition such as T2DM has been reported to achieve optimal health (Wallace et al. 2016; DeWalt et al. 2009). This thesis has highlighted that the role of goal setting can determine adapted health behaviours (see Section 5.4.3). For this reason, it is important that healthcare professionals working with WAIs support them to set goals that will improve their T2DM

management. This can be done by exploring the main concerns of these individuals and how to address such concerns. Supporting them with health education in terms of how managing T2DM can be improved beyond their current presentation can help them set better goals in managing their condition.

8.4.3.3 *Working with Friends and Family (Stakeholders)*

In supporting WAIs with T2DM management, there is a need to involve kin networks of each individual. The nature of T2DM management as a social process means that other people are involved in the management process (Koetsenruijter et al 2016; Vissenberg et al. 2016). This can be viewed as a process that involves not only the individual affected with the condition but also the kin networks of the individual. Working with these networks can contribute to improving T2DM management for WAIs living with the condition. This study has highlighted the impact of kin networks in managing T2DM (see Section 7.2). The findings in this study discuss how participants depend on support from friends and family members while also receiving support from the social system available in the community for the management of T2DM (Mendoza-Núñez 2016). Working with these networks to set goals and pathways to achieving such goals can significantly affect the management of T2DM for WAIs living with T2DM.

8.5 Reflection: Lessons Learned During this Study

In the methodology chapter of this study (see Chapter 3), I stated my stance in terms of my chosen methodology. I decided to follow CGT approach that research should generate multiple concerns of participants. As discussed, the concerns of participants were not greatly developed at the start of the process and only matured halfway through the study process. In retrospect, I brought with me some preconceptions concerning the issues faced by WAIs living with T2DM. One of such is in relation to the impression that T2DM management should be the most concerning issue that these individuals face in their daily life. However, my findings in the study show that WAIs have concerns beyond living with T2DM. They are individuals that strive to live as normally as possible. They are more than just people that live with T2DM. They have other aspects of life that they found to be more concerning and do things as normal as they can. In this lesson, I wish I had involved

some WAIs at the start of designing this study; my research might have taken a different approach in exploring T2DM management issues among this population. In future research, it will be valuable if I undertake research where participants are actively involved in shaping the process from design to data collection and implementation of findings (Beresford 2007).

As a researcher of CGT methods, I acknowledged to not staying completely objective and neutral. This is mainly because I brought with me professional and lived experiences over the years to this study. I had to recognise the influences, advantages and disadvantages of these experiences (Appleton 2011). I had to employ the use of reflection throughout the research process to avoid bias (see Section 4.1.8). In addition, I used written field notes throughout the research process. Furthermore, I had regular supervision with my supervisors (Blythe et al. 2018). In the data collection phase, I ensured there were no power relations between the participants and me. They had as much say in the questions that I asked and can choose not to answer follow up questions as they wish. This was why the questions began in a very generic direction of exploring the experiences of living with T2DM. The further questions then followed the direction they took their responses, although the process of interview was not “hygienic” as there were interruptions from friends and families in support group setting interviews and phone calls at participants’ homes.

At the early stages of the interviews, my follow up questions were more directed towards the challenges and issues that participants experience in living with T2DM. However, as the analysis progressed, I realised there are other aspects that seem to concern participants. This was mainly in terms of the strategies that they employ to manage their condition. This highlights their preference for normality in living with T2DM.

I have discussed my relation as an “inside researcher” to the community where this study was conducted. As a West African descent, I have my own previous experiences in living in different environments. Furthermore, I have academic knowledge of the literature on migrants’ health. I was initially impacted with the belief that WAIs living with T2DM faced many difficulties. I had to work on not imposing my beliefs on their narrations and the whole process. I was very reflective on the new information that I got as I carried out the research. This is particularly needed in a GT

study (Glaser 2004). Furthermore, supervision sessions contributed to my reflection of the findings in this study to ensure this is reflecting participants' experiences. In working with participants in this study, I wanted to ensure that my interpretation of their experiences represented what they had provided the study. I worked on providing participants with transcripts and findings from the study, however, only one participant accepted their audio recordings and transcript. Others declined and did not provide feedback. I went on to look for other ways to feed the findings of this study to them as a group. This was done through presentation at the support group meetings. Majority in the group agreed with my interpretation of their experiences in living with T2DM in the UK. We reflected as a group on the implication of the findings on their management of T2DM.

My research of T2DM management experiences among West Africa immigrants in the UK I believe is appropriate to have used qualitative approach in exploring this topic area. The aim was to understand the constructions of participants in relation to their experiences in managing T2DM (Charmaz 2006). This I believe I have been able to achieve and represent a fair reflection of the experiences of these individuals. I believe my exploration of experiences of WAIs living with T2DM is needed as highlighted in the purpose of this study (see Section 1.8)

Although this study has contributed significantly to the body of knowledge in the management of T2DM among WAIs, there is a need to highlight the limitations that accompany the study.

8.6 Limitations of Study

This section of the chapter focuses on acknowledging the limitations of the study. There is a need for the findings of a study to be viewed and considered in the context of the study limitations (Puhan et al. 2012). Identified limitations can be as a result of the study methodologies and approaches adopted to collect data. These may affect the value and credibility of the study, its implication on practice and the general population may be affected. I reflect on being a PhD student at external institutions (DM support groups) with research interest that might not merit key priority in the context of their busy work lives.

1. The adoption of CGT for this study, the research questions did not seek to test any hypothesis but rather to generate a theory that can be tested for

- T2DM management among participants in the study. Therefore, the findings from this study can be viewed as an interpretive and not descriptive construct of reality, which might be viewed as not presenting the exact picture of things.
2. Initially, a purposive sampling technique was used to recruit participants. This sampling technique might have led to unknown selection bias. The use of multiple sampling techniques due to the challenges of recruiting from this population may affect the transferability of the findings. Caution needs to be taken when applying the findings from this study to a more generalised context in the management of T2DM among other PLWDM in the UK. However, CGT offers potential for theoretical generalisation to wider and similar contexts and informing statistical studies to further findings (Alemu et al. 2015).
 3. This study focuses on exploring the experiences of participants using a constructivist perspective which means mainly the reconstruction of experiences by participants is gathered. Although limited participant observation was possible during support group meetings and during some interviews, it gave insight into the topic and longer opportunities would have contributed immensely to the findings of this study.
 4. Although this study at the planning phase was designed to be mainly a qualitative approach, it was anticipated that a supporting quantitative approach would be employed to complete the study. This was however decided against after the data collection and analysis of the qualitative aspect of the study. It was found that the detailed rich information gotten from the study will be sufficient to provide readers with a complete story of the management of T2DM among this population. In addition, it was thought best to carry out thorough analysis of the qualitative data collected. It is anticipated that this research will be taken further into post-doctoral investigations to test and confirm the theory generated in this study.
 5. In the literature review aspect of this study, only articles published in English were included in the review. Articles published in other languages were not included in the review, this might have left out some studies related to this topic and hamper the comparison of findings of each study. However, most Western countries are English speaking as they receive the highest number

of migrants globally. I, therefore, feel that majority of articles in this topic area were published in English and covered in the search strategy for the review.

6. Apart from Nigeria, Ghana, Sierra Leone and Gambia that are English speaking countries in WA, other countries in the region are French-speaking countries. Therefore, conducting this study in English might have excluded individuals from French-speaking countries in West African region. This can be defended as majority of immigrant senders to the UK are from English speaking countries due to communication language. In addition, the listed countries are higher sender of immigrants to the UK compared to the French-speaking countries (see Section 1.7). Although the limitations of this study have been highlighted, there are recommendations that have been generated as a result of the significant findings of this study. These recommendations will assist in improving T2DM management among WAls living in the UK.

8.7 Recommendations for Public Health Practice

Although T2DM for the most part of living with the condition is asymptomatic, complications as a result of poor management can be life- threatening and in some cases lead to death (Papatheodorou et al. 2018; Meeto 2014; Fowler 2011). The findings of this study highlight the challenges individuals face with adapting to changes in the environment following migration.

In promoting health of WAls living with T2DM, the Ottawa Charter framework (WHO 1986) will be valuable in addressing the challenges highlighted in this study. The importance of the framework is highlighted in five action areas, these include

- Building healthy public policy
- Creating supportive environments
- Strengthening community action
- Developing personal skills
- Re-orientating healthcare services towards prevention of illness and promotion of health.

These actions have been prioritised as advocates, enablers and mediators of health promotion (WHO 1986). The significance of this framework in promoting health in the UK has been highlighted (Thompson et al. 2018). The management challenges that were highlighted in this study require a holistic and interdisciplinary approach into

providing solutions to these issues. All recommendations are in relation to the Ottawa Charter health promotion framework.

This section presents recommendations based on this study's findings for implementation, which could improve and promote the health of WAIs living with T2DM in the UK. Efforts from all aspects of society have to be involved in achieving this promotion of health. From individual, community and societal levels are required to achieve the set goal of reducing mortality from non-communicable disease by one-third according to the SDG 3 and improving migrants' health (Taran et al. 2016). Some of the recommendations are concerning ways to improve the health of WAIs living with T2DM in the UK while others are concerned with research interests in this population to help better manage their condition.

1. There is a need to train healthcare professionals in working with diverse cultures and expectations given that the diverse nature of the UK's population comprises of more than 13% foreign born (ONS 2015). This can be achieved by including courses and training programmes in universities on cultural knowledge and expectations of a diverse society (Vargas-Silva and Rienzo 2017). This will enable comprehensive care to be delivered to individuals irrespective of their culture. In addition, there will be better understanding of patients' cultural practices and the effect on T2DM management.
2. There were issues of affordability of healthy eating among younger participants under retirement age. These were discussed as a barrier to optimal T2DM management. A general policy should be considered in supporting these individuals to have easier access to healthy diets. One way of achieving this might be through a subsidiary plan by policymakers to support people that require healthy dietary plans to manage their condition. This will allow PLWDM access to such healthy meals. This will also encourage individuals to get healthy meals instead of cheap unhealthy ones, thereby improving their health condition.
3. This study also revealed that due to the environmental change, West Africans are experiencing low levels of physical activity. There is a need for tailored physical activity intervention that will support individuals from this population to increase their physical activity level. One way of doing this might be to encourage leisure physical activity among this population.

Promoting physical activity support programs especially within communities for easy access by these individuals can be valuable in meeting daily targets of physical activity. Another way is to encourage daily activities to be done manually rather than using machines. For example, encourage walking and running as a form of transportation than other forms of transportation. At least 150 minutes of walking per week should be the target.

4. Majority of people that were diagnosed in WA presented late to medical facilities due to difficulty accessing healthcare facilities, which affects T2DM management. It is therefore important that healthcare practitioners explore the management history of these individuals prior to management recommendations. In doing this, the healthcare professionals can adopt a tailored management plan and the patients making it easier to adapt to recommendations.
5. One finding from this study is the support that people get from religious places. This is more than just the beliefs about divine help in managing their T2DM. Participants also get support from other members of the religious centre in managing T2DM especially when it involves social gathering. However, getting this support is affected by non-disclosure that most participants practice. Encouraging openness in T2DM management is essential. Healthcare practitioners need to understand the impact of these religious organisations in managing T2DM.
6. In recruiting participants for this study, religious places were valuable locations for recruitment. It is important that in the recommendation for this study, it is suggested that leaders of religious organisations should be encouraged to be an advocate for health discussions. These individuals can be recruited as a health champion in their organisations. This is important due to the great influence that they have on their members. They are more likely to take up medical advice from these sources. It is therefore important that correct information is provided in these organisations. One way of achieving this will be for healthcare practitioners to partner with religious leaders, train them and work with them in referring people with T2DM for better management recommendations.

7. There is a need for better discussions about T2DM management outside the clinic settings. Participants in this study discussed being consistent with their medication and check-ups due to the ease of accessing healthcare services. However, there were practices outside clinical interventions that may not support the optimal management of T2DM. These practices need to be discussed with education on how healthy lifestyle practises can complement medications in improving the health of this population. Religion places can be instrumental in this strategy by organising health education seminars in these environments. This will build on the importance WAs attached to religion and information that acquired from there.
8. The perceived QoL among participants in this study was reported as positive and improved when related to before migration from WA. This is mainly due to supports available in the UK for managing T2DM such as ease of accessing healthcare services, free medical services. These services are not readily available in WA; hence, patients are required to make out-of-pocket payments for management expenses. This makes them see management better in the UK resulting in perception of better QOL as found in this study. Although WAs may have experienced improved T2DM management since migration, there is still a need to improve the present management of T2DM. This is particularly in the need to reduce health disparity noted in this population to improve their T2DM management outcomes as compared to Whites and South Asians (Alloh et al. 2019a). This is a challenge that requires healthcare professionals, policy makers and the research communities. Assisting this population to see the need to work towards improving their health outcome despite their perceived improvement when compared to when in WA is paramount. Helping patients realise that there is a need for optimal health despite their noted improvement is important in overcoming this challenge. This can be achieved through T2DM education, targeted at the need to achieve optimal management outcome.
9. In terms of the major finding of this study, achieving normality was important to participants. Assisting patients to adjust to the new management regime and meet medical expectations is paramount. One

way of achieving this might be the development of research tools that can help in proper identification of the factors that contribute to adjustment and how important each can be to the management process. Achieving this can assist in prioritising target interventions to support people from this population in adjusting to their management regime in the UK.

10. Need for experts to design interventions but remain behind the scene for community members to champion these programmes. This allows the community to take ownership of their health and feel involved in such programmes. Members of the community such as religious leaders can act as partners with healthcare professionals in delivery of such interventions.
11. From the findings of this study, delayed diagnosis is an issue that can be challenging in the management of T2DM. T2DM prevention such as the DPP can involve incentives. This may not necessarily be monetary but positive testimonies of early diagnosis and the impact on improving management outcome can be shared with people to encourage early testing for T2DM
12. Organising community-sporting competitions, less driving, free biking, limited parking areas, supportive environment for instrumental physical activity can all be provided in terms of improving environmental contribution to increase daily physical activity level. Policymakers can influence such interventions by allocating resources.
13. Although most participants diagnosed in the UK presented earlier as compared to participants diagnosed in WA, there was still a need for collaboration in terms of UK partnership with WA health care systems, which can help test people for early diagnosis of T2DM. This study highlights the need for cross-border medicine and public health collaboration. Policymakers can explore ways in achieving such important intervention. This is a preventive measure even for the UK as people that are diagnosed early are better at managing their T2DM and present with fewer complications than people that are diagnosed late and therefore struggle with recommended management regime.

8.8 Implication for Future Research Areas

This study applied the use of CGT to explore the lived experiences of people that are living with T2DM in the UK and have migrated from the region in support groups and community settings. The application of CGT revealed interesting findings that have been discussed in this thesis. In addition, this study has provided insights into possible ways in which healthcare professionals can assist individuals from these communities to improve their T2DM management regime. Recommendations have been presented on how to better support these individuals both within the clinical setting and on lifestyle management of their condition. Beyond these findings, this study has identified areas for further research which are beyond the scope of this study but will be valuable for the improvement of T2DM outcome among people from this population. These areas for future research are presented below.

1. This study used a qualitative approach, which has resulted in important findings and presentation of a theory for the management of T2DM among WAls. Future research can build on these findings by developing a tool that can be used to test this generated theory among immigrant populations. This can assist in fine-tuning the focus of management issues that require tailored interventions.
2. Supports among PLWDM in the UK are needed, these are necessary to improve the management of T2DM. Future research can produce tailored intervention based on the findings of this study in improving T2DM management among this population.
3. Healthcare professionals can research into what normality means to their patients and how this can be maintained when recommending T2DM management regime to them especially when they are outside clinical settings.
4. Adapting to new recommendations was found to be challenging to this population group in this study. Future research can focus on how to support individuals in this population to adjust to new recommendations by identifying important barriers to achieving these adjustments.
5. Healthy food preparation and unfamiliarity were discussed as being challenging for participants in this study. Future research can focus on

exploring ways to cook healthier versions of WA traditional meals. This way it can be easier to adhere to healthier dietary recommendations and achieve balanced diets.

6. Reduced physical activity was reported among participants in this study, this was mainly because of the unfamiliarity of these people to leisure physical activity that are common in the UK. Future research needs to explore possible ways in which people from this population can access leisure physical activity. Alternatively identifying ways in which instrumental/mandatory physical activity can be incorporated into their daily lives to help achieve the recommended physical activity level of 150mins/week of low to moderate level will be valuable.
7. This study found that people use alternative medication especially as recommended by friends and family in WA, although the use of these alternative treatments such as bitter leaf, Aloe Vera and garlic is not as common in the UK. The efficacy of these herbs has not been verified which might affect the management of the T2DM condition for this population. It is recommended that research communities intensify research into the efficacy of these alternative medications. It can help to investigate the types of alternative medications people use and how do they rationalise this with their prescribed medications.

8.9 Dissemination

Participants in this study were informed about the use of the findings of this study and the various ways that the study will be disseminated. Different means were used to disseminate the findings from this study, this is to amplify the impact through academic community, practitioners and the general public.

Firstly, an editorial was published to highlight the importance of this study and more research in this area (Alloh 2018a). Secondly, the systematic review carried out from this study is in press for publication in *Journal of Global Reports* (Alloh et al. 2019a). The review was also presented at international conference on interdisciplinary social sciences for 2018. This was also presented at the Postgraduate research conference (Bournemouth, March 2017). Thirdly, part of the findings from this study was

published in *International Journal of Environmental Research and Public Health* (Alloh et al. 2019b).

Furthermore, preliminary findings were presented at 1st international migration congress on health and race May 2018. To make the findings available for WAIs living with T2DM, this study was presented at support groups to group members in London area. Furthermore, the findings were presented at the Festival of Learning for the public held by Bournemouth University in July 2017. In addition, the impact was also presented at “Photo exhibition” organised Bournemouth University in 2018. The impact of the findings has been published in different journals on topic areas listed (see Appendix 13). In addition, it is anticipated that several publications will be published from this study.

8.10 Chapter Summary

This chapter presents the contribution of this study in relation to the research question, the generated theory and the literature. Discussion was presented on meeting qualitative criteria. Key messages that emerged from the contributions of the study to the literature, public health practice and research community were presented. In addition, limitations of the study were discussed and how these contribute to understanding the findings. The chapter concludes with areas for future research in T2DM management among WAIs. Dissemination of research findings is presented. Finally, thesis conclusion to summarise discussions of this thesis is presented after this section.

8.11 Thesis Conclusion

This study has revealed that WAIs living with T2DM can have different experiences for their management regime due to migration. From the literature, it was noted that delayed T2DM diagnosis is common among immigrant populations; however, reasons for this have not been fully explored. This study was able to find that the reason for the late presentation involved individual factors such as beliefs about T2DM, limited knowledge of the condition and affordability of T2DM testing. However, beyond these factors are the environmental factors such as awareness of T2DM in the community, poor healthcare facility, inaccessibility of healthcare services. These contribute to the individual factors that determine the actions

individuals take in managing their symptoms before presenting to a healthcare facility for T2DM tests. Challenges in meeting T2DM management recommendations were found to be related to lifestyle changes in the UK. Finally, strategies that individuals employ in managing their condition were reported to involve preserving their normality.

It was enlightening to find the perception of participants in this study to differ from my expectations in relation to the management of T2DM. It was anticipated that participants would present stories that show they are concerned about their T2DM with talks about how they work towards ensuring they follow recommendations due to the chronic nature of T2DM. The theory of *Normality: Adapting to new* has highlighted that this is not completely accurate. Although, participants talked about their concerns with living with T2DM, it seems the move to the UK has helped them come to acceptance of their condition. They were more concerned with holding on to their 'normal' as it is integral to their existence.

The implication of this is that it will be valuable to adopt the recommendations in this study to address the needs and improve the management of T2DM among this group. Collaborative efforts are needed in addressing the need to improve the management of T2DM among this population. There is a need to go beyond the research community, healthcare professionals and policymakers to include the patients in the effort to achieve better health outcomes for all. This is needed to avoid mismatch between the concerns of the people and what policymakers and healthcare practitioners deem to be needed to support these people in managing T2DM. A fast track process of incorporating new findings into healthcare practice is needed. This will help cascade frontline healthcare professionals' usage of the recommendations in this thesis in supporting WAIs living with T2DM in the UK as a progressive way to address the concerns highlighted in this project.

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Appendices

Appendix 1: Protocol Published on PROSPERO

PROSPERO International prospective register of systematic reviews



Diabetes management outcome among Black-Africans compared to other ethnic groups in Western countries: A mixed-methods systematic review
Folashade Alloh, Angela Turner-Wilson, Ann Hemingway

Citation

Folashade Alloh, Angela Turner-Wilson, Ann Hemingway. Diabetes management outcome among Black-Africans compared to other ethnic groups in Western countries: A mixed-methods systematic review. PROSPERO 2018 CRD42018088311 Available from: http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018088311

Review question

Is there disparity in diabetes outcome among black-Africans compared to other ethnic groups in Western countries?

Does diabetes management differ among black-Africans and black-Caribbean?

Searches

Major biomedical and sociological databases have been searched which include: PubMed, CINAHL, MEDLINE, Embase, Web of Science, Scopus, ScienceDirect, PsycINFO, AMED, Cochrane. MeSH terms and keywords were combined and searched in all databases

All articles will be in English Language to be included. The search is limited from 2007-2018. All articles were exported into EndNote X7.7.1 for storage and management of references.

Types of study to be included

Inclusion

Quantitative and qualitative studies

Measures diabetes outcomes

Explores diabetes management

Classify participants based on ethnicity

Exclusion

Reviews and Systematic review

No classification based on ethnicity

Condition or domain being studied

Type 2 diabetes is a major public health disease in Western countries. In addition, higher prevalence have been reported among black-Africans compared to general population. This review is aim at comparing diabetes management outcomes Glycated Haemoglobin (HbA1c), Blood Pressure and Cholesterol level among black-Africans and other ethnic groups (Specifically black-Caribbean, Whites and South Asians). This is give better understanding of diabetes management among this population and how this compares to other ethnic groups in Western countries. Furthermore, qualitative synthesis of qualitative articles retrieved will be analysed to understand the findings from quantitative data in the review.

Appendix 2: Detailed inclusion/exclusion table of selected articles

	Quality	Coverage	Topic	Population	Study type
Inclusion	Articles that passed screening after evaluation with quality assessment tool	Western countries (North America and Europe)	Articles that report type 2 diabetes management outcomes among ethnic groups.	Participants: Black African	Articles from 2006- 2018
			Articles that measure prevalence of type 2 diabetes, HbA1c, cholesterol, blood pressure and BMI.	Comparison with South Asian, White	Articles reporting primary data with methodology rigour
Exclusion	Articles that failed to pass quality assessment screening.	Other countries in the world	Less related to type 2 diabetes management outcome measure	Ethnic minorities aside of the above mentioned	Articles prior to 2006
			Not specifically related to type 2 diabetes	Study population not representative of immigrants in host country (e.g	Method articles e.g instrument development, risk score development,

				UK) Children excluded	validation work. Review articles and secondary evidences. Articles reporting no empirical data and Non-English articles.
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Appendix 3: Demographic of Participants in studies review

S/N	Citation	Study Aim	Study Design	Study Quality	Participant's Demography	Key Findings	Conclusion
1	Ballotari et al. 2015	To compare prevalence of type 2 diabetes among immigrants and Italians and to evaluate the disparities in the management and glycaemic control.	Quantitative approach measuring clinical outcomes of prevalence and HbA1C value	17/20, 85%	Citizenship: High Developed Countries (HDC) High Migration Countries (HMC) And High Migration Pressure Countries (HMPC) Sampling: Population-based data Sample size: 17, 195 15, 889 Italian 11 HDC 1,295 HMPC Age Range: 20-74 Gender: Male and Female Context: Italy	Foreigners are younger with type 2 diabetes than Italians. Sub-Saharan Africans with lowest mean age 44.6 years for Female and 44.9years for Male. Both sexes experience a higher prevalence of type 2 diabetes than Italian. Lower Italians not performing HbA1C compared to immigrants. Immigrants had worse indicator in HbA1C measure. Higher odds of not being tested for HbA1C than Italians. Immigrants experience higher odds compared to Italians for not being in the care of type 2 diabetes clinics, without HbA1C tests in 2010 and with HbA1C $\geq 9\%$.	Confirmation of the higher prevalence of type 2 diabetes among immigrants than Italian. Immigrants are less compliant and more likely to experience worse levels of HbA1C

2	Dreyer et al. 2009	To establish the impact of ethnicity on the prevalence and severity of type 2 diabetes mellitus and Chronic Kidney Disease (CKD)	Quantitative Cross-sectional study	17/20, 85%	34, 359 Adults coded Whites Blacks and South Asians	Overall prevalence for White 3.5%, 11% for South Asian and 8% for Blacks. Diabetic proteinuria was more frequent among blacks compared to Whites (22.4% vs. 14.1%) but similar in South Asia (21% Vs 22%). Lower CKD when compared with whites. Blood pressure is less controlled in Blacks regardless of CKD, less than 50% of diabetics achieve Bp =< 130/80mmHg. Blacks receiving prescription more than South Asians or Whites	Higher level of type 2 diabetes among ethnic minority groups was supported with this study. Blacks have the worse outcome with higher levels of proteinuria and blood pressure than Whites and South Asians. Severe CKD is higher among Blacks and South Asia with mild CKD higher among Whites.
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3	James et al. 2012	To describe the independent influence of both ethnic and social group on HbA1C levels in people with type 2 diabetes routinely cared for by general practice for over 5 years.	Quantitative Cross-sectional from Web-enabled Computer System	18/20, 90%	Whites: 5,206 (22%) Black African/Caribbean: 3,923 (17%) South Asian: 13,633 (58%) and Others 721 (3%) Age Range: 35-75 years Sample size: 24, 111.	White (69%) people were less likely to be on intensive type 2 diabetes treatment (Combined oral or Insulin) than South Asians (75%) and Black African/Caribbean (73%). Mean of HbA1C declined in Whites by 0.4% from 8.2% to 7.8%: 0.5% for South Asia and African/Caribbean from 8.5% to 8.0%. The proportion of people with 7.5% or less HbA1C increased by 12% in Whites, 14% in South Asian and 15% in African/Caribbean.	There was improvement in HbA1C among all ethnic groups. However, ethnic differences persisted. Ethnic group and social deprivation are independently associated with HbA1C.
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4	Kahn et al. 2012	To examine multi-ethnic participants' explanation of how their type 2 diabetes began, understandings about their illness, description of the symptoms experienced. To analyse the extent to which themes persisted across ethnic, cultural and racial boundaries	Qualitative approach using semi-structured interviews	17/20, 85%	Refugee (Somalia, Sudan, Burma or Cuba) Sample Size: 34 Male: 8 Female: 26 Education: 13 secondary school completion	Unexpected and late diagnosis of type 2 diabetes was reported. Reaction to living with diagnosis was reported as grief, anger, depressive symptoms, and acceptance. Most patients understanding is focused on symptoms and diet	People living with type 2 diabetes express emotions similar to dying patients. There is a need for practitioners to include patients as partners in the development of patient centred approach to type 2 diabetes management.
5	Kindarara et al. 2017	To describe Sub-Saharan African immigrants' health-illness transition experiences associated with type 2 diabetes mellitus self-management	Qualitative approach using face-to-face semi-structured in-depth interview	18/20, 90%	Sub-Sharan African immigrants Sample Size: 10 Mean Age: 60.3 years Sampling: Purposive and Snowballing Sampling Male: 5 Female: 5	Participants reported limited knowledge about type 2 diabetes. Dealing with the shock of diagnosis with type 2 diabetes, cultural beliefs can be inhibitors of self-management	Professionals need to access and recognise inhibitors that can influence type 2 diabetes self-management.

6	Kohinor et al. 2011	To determine the social-cultural factors affecting the dietary behaviour of Dutch Surinamese patients with type 2 diabetes	Qualitative approach using Grounded theory methodology	18/20, 90%	African Surinamese Hindustani Surinamese Sample Size: 32 Mean Age: 55 Male: 12 Female: 20	Participants reported finding it difficult to choose good food products, holding on to their traditional food as identity, culture plays important role in their food preparation.	Immigrants continue with their country of origin food and cultural considerations should be involved in advising people with type 2 diabetes on dietary recommendations.
7	Snider et al. 2017	To explore both the age-specific prevalence of type 2 diabetes and the current level of awareness, medical treatment and glycaemic control among different ethnic groups.	Quantitative cross-sectional study	18/20, 90%	Dutch 4,541 South Asia Surinamese 3,032 African Surinamese 4,109, Ghanaian 2,232, Turkish 3,591 and Moroccan 3,887. Sample size: 21,483 Sampling: Municipal register Age range: 18-70	Type 2 diabetes prevalence increased among ethnic groups with age. Higher than Dutch and significant from age 31-40 years. There was higher awareness of type 2 diabetes (70-80%) among ethnic groups compared to Dutch (60%). The odds for receiving medical treatment for type 2 diabetes is also higher among all ethnic minorities compared to Dutch. All ethnic minority men have significantly lower odds of controlled HbA1C than Dutch	Ethnic groups have higher prevalence of type 2 diabetes, although awareness is higher than among Dutch. There was significant lower control of HbA1C among ethnic minority men than Dutch but no difference among women. There is need to understand the cause of poor glycaemic control among ethnic minorities.

8	Verma et al. 2010	To determine the impact of quality improvement initiatives on ethnic disparities in type 2 diabetes management in the UK	Quantitative cross-sectional survey	18/20, 90%	<p>4309 Participants Whites: 13.7% Blacks: 16.1% South Asians: 51.2% Others: 18.3% Age: 18 and above Male: 2393 (55.5%) Female: 1871 (43.4%) No sex: 45 (1.0%)</p> <p>354</p>	<p>No difference in evidence of the process of care among all ethnic groups The Proportion of patients meeting national treatment targets for Bp, Cholesterol and HbA1C increased from 1997-2007. Black patients achieving the targets doubled but remain less likely to meet target in 2006 compared to whites. Blacks were less likely to meet all three targets than Whites. South Asians were more likely to meet cholesterol target than Whites by 2006. There is increased prescription of lipid-lowering, oral hypoglycaemic agents, insulin and antihypertensive medications since 1997. Increase in prescription medication for Blacks but lower lipid-lowering medication than White patients in 2006. Black patients were more likely to be on oral hypoglycaemia agent than Whites.</p>	<p>There has been improvement in patients meeting the three targets since 1997. However, less than 20 % were able to meet this target. Medication prescription also increased for all ethnic groups. There is need for better improvement in care and management.</p>
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9	Fosse-Edorh et al. 2014	To present an overview of type 2 diabetes among North African immigrants in France	Quantitative cross-sectional study using national survey	17/20, 85%	Race: Africans France Sample technique: National survey records Sample size: Born in North Africa (BNA) Male: 191 Born in France (BIF) Male: 5821 BNA (Female) 136 BIF (Female) 6890 Mean Age: BNA (Male) 58 BIF (Male) 61 BNA (Female) 56 BIF (Female) 63 Context: France Ethnicity: Black and White	Type 2 type prevalence and obesity is higher among BNA than BIF. HbA1c is also higher among BNA than BIF which indicate poorer control among this population.	A higher prevalence of type 2 diabetes and poorer glycaemic control was reported among BNA women. There is a poorer control among both Male and Female BNA than BIF contributing to complication disparity among this population
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10	Wieland et al. 2012	To measure outcomes of type 2 diabetes care among Somali immigrants	Quantitative methodology	16/20, 80%	Race: Somali And Non-Somali Sample technique: Medical record Sample size: 81 Somalian 5,843 Non-Somalian Mean Age: not mentioned Context: USA Socioeconomic status: Not mentioned Ethnicity: Black and Others	Somalians were less likely to meet the optimum HbA1C control <7%. There was no significant difference in the lipid control level among the Somali and Non- Somali groups. Also, there was no difference in the achievement of blood pressure control between the two groups.	There is a disparity in type 2 diabetes control among Somali immigrants living with type 2 diabetes as compared to Non-Somali groups. This might be due to medical preference, socioeconomic factors, health literacy and culture. Community-practice based intervention is needed to improve type 2 diabetes management among this vulnerable population group.
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11	Wallin et al. 2007	To explore the daily life experience of Somalian diabetic patients living in Sweden with gender-related perspectives to type 2 diabetes-related problems management	Qualitative methodology Interviews	16/20, 80%	Race: Somalian Sample Technique: Not mentioned Sample size: 19 Participants interviewed with interpreter's help. Mean Age: 54.9 Context: Sweden Socioeconomic status: Not mentioned Ethnicity: Black	Experience of distress in daily life as participants find it difficult to maintain daily activities. Difficult to follow the dietary advice by health professional	Cultural consideration is essential in health promotional services for immigrants. Religion and gender consideration is also essential in the prevention and management of type 2 diabetes among this ethnic group.
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12	Choukem et al. 2014	To determine the contribution of migration on the characteristic of type 2 diabetes comparing three populations living with type 2 diabetes	Quantitative cross-sectional study design	19/20, 95%	Race: Cameroonians Caucasians Sample technique: Cross-sectional survey Sample size: Cameroonian 100 African immigrants 98 Caucasians 199 Age Range Cameroonian 30-80 African migrant 26-75 Caucasian 28-89 Context: France Socioeconomic status: Not mentioned Ethnicity: Black and White	Type 2 diabetes was diagnosed at a later age among Cameroonians. There were no differences among Cameroonians and African immigrants in mean BMI, overweight, obesity and smoking but higher than among Caucasians. Cameroonians had the highest rate of microvascular complications than the other groups.	Cameroonians are diagnosed with type 2 diabetes at a later age but present with higher complications than African immigrants and Caucasians which might be due to delayed diagnosis and poorer management among the Cameroonians population.
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13	Abubakari et al. 2013	To investigate type 2 diabetes knowledge and illness perception on self-management and also to determine the relationship between self-management behaviour and glycaemic control among African-Origin patients in the UK.	Quantitative Methodology	18/20, 90%	Race: White British, African-Caribbean and Black-African Sample technique: Convenience sampling Sample size: 137 White British 123 Black-Caribbean and 99 Black African Context: UK Socioeconomic status: Not mentioned. Ethnicity: White and Black.	High knowledge about type 2 diabetes does not influence better self-management in Whites and was related to less self-management in Africans. High illness perception among white-British was associated with less exercise self-management. In Africans, high illness perception was associated with lower foot management and dietary regulation. Perceived personal control was related to frequent overall self-management	Type 2 diabetes knowledge and perception varies between ethnic groups in the UK which might influence the disease management outcome. These perceptions need to be identified and any misconceptions corrected to allow for efficient self-management recommendations for this population.
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14	Bijlholt et al. 2018	To assess differences in awareness, treatment and control of type 2 diabetes among a relatively homogeneous population from Ghanaians living in \Rural, urban parts of Ghana and Ghanaian immigrants living in European cities	Quantitative Cross-sectional study	19/20, 95%	Race: Blacks Sample selection: Purposive Sample size: 530 Amsterdam 172 Berlin 70 London 102 Urban Ghana 135 Rural Ghana 51 Mean Age: Amsterdam 52.2 Berlin 51.1 London 54.6 Urban Ghana 52.9 Rural Ghana 54.5 Gender: Male and Female Context: Amsterdam Berlin London Ghana Ethnicity: Black-Africans (100%)	Type 2 diabetes awareness was lowest among people in rural Ghana and highest in European cities (Amsterdam, Berlin and London). Type 2 diabetes control was similar in Amsterdam, Berlin and rural Ghana but lower in urban Ghana and lowest in London.	Although type 2 diabetes awareness and treatment rates were lowest in rural Ghana, type 2 diabetes control was lowest in London and urban Ghana sites.
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15	Brämberg et al 2012	To describe the care provided by a type 2 diabetes Nurse Specialist (DNS) and the care needs expressed by immigrants living with type 2 diabetes	Qualitative Observational study	16/20, 80%	Race: Black Caribbean (BC) and Middle-East Sample selection: Purposive Sample size: 10 observations of consultation interview Gender: Male and Female Context: Sweden	There was power imbalance with patients passive during the consultation. There was limited support provided by DNS in addressing patient's concerns due to lack of individualised care.	Balanced communication is urgently needed. Person-centred consultation and care for people from immigrant background is seen as an important approach to type 2 diabetes management among this population.
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S/N- Serial Number, HbA1c- Haemoglobin A1c, Bp- Blood pressure, USA- United States of America, UK- United Kingdom

Appendix 4: Biomedical target outcomes based on different health organisations

Health Organisation	Target	Reference
HbA1C		
IDF	< 7% (53 mmol/l)	IDF 2017
WHO	< 6.5% (48mmol/mol)	WHO 2007
NICE	< 6.5% (48mmol/mol)	NICE 2015
ADA	< 7% (53mmol/mol)	ADA 2016
Blood Pressure		
IDF	Systolic 130-140mmHg	IDF 2017
	Diastolic 80mmHg	
WHO	130/80mmHg	WHO 2007
NICE	< 140/80mmHg	NICE 2009
ADA	< 140/90mmHg	De Boer et al. 2017
Cholesterol		
IDF	LDL cholesterol < 2.6mmol/l	IDF 2017
WHO	Total Cholesterol < 4.0 mmol/l (152 mg/dl)	WHO 2007
	LDL Cholesterol < 2.0 mmol/l (77mg/dl)	

NICE	LDL cholesterol < 2.0mmol/l	NICE 2012b
	HDL cholesterol < 1.4 mmol/l	
	Total cholesterol < 4.0 mmol/l	
ADA	LDL cholesterol < 2.6mmol/l (100mg/dl)	Eldor and Raz 2009

IDF: International Type 2 diabetes Federation

WHO: World Health Organization

NICE: National Institute for Health and Care Excellence

ADA: American Diabetes Association

Appendix 5: Types of gatekeepers approached for support in recruiting participants

Gatekeeper Type	Position to potential participants	Involvement with our study	Contact capacity	Grant given/solicited
Institution Gatekeeper	They assist in getting researcher through to institution members.	They are head of organisations; usually have less contact with the researcher. Mainly to ensure the study has ethical approval before deciding to grant access.	Formal	Access grant
Committee gatekeeper	They may not be very concerned about ethics document but are more interested in the research design and poster.	They were more involved and within the same organisation. Mainly supported with recruiting members and informing them about the study. They	Formal	Access and Cooperation grant

		were involved through the institution committee, two of the gatekeepers participated in the study.		
Community gatekeeper	Community gatekeepers are important in allowing researcher to access potential participants within communities. They can be very helpful if contacted. They might not require ethical or research design documents.	Community gatekeepers were helpful in this study. They directed researcher to areas where potential participants can be accessed in the community. Some contacted potential participants on researcher's behalf.	Informal	Access/ Cooperation grant
Family gatekeeper	These gatekeepers are usually family members of the potential participant.	Individuals contacted for assistance in accessing their family members in this study were	Informal	Access and Cooperation grant

	<p>They can be the hardest to convince for support or easiest, depending on their interest in the study. However, securing their support can allow their family to participate in the study.</p>	<p>supportive. Were more concerned about the opportunity to have their loved ones share their story and experience of living with Type 2 diabetes.</p>		
Self-gatekeepers	<p>The individual gatekeeping among participants. They decide whether to participate in the study and how much information they are willing to supply the study</p>	<p>This was an aspect of accessing information that was not anticipated. This was encountered among potential participants as they act as their own gatekeeper. They requested further information</p>	Informal	Cooperation grant

		<p>outside what was provided in the poster and information sheet.</p> <p>Convincing them to allow access to their information was essential as participation goes beyond involvement through to cooperation.</p> <p>This was particularly important as people from this ethnic group are less willing to share their experiences of living with a disease condition.</p>		
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Appendix 6: Interview guide

Overarching question

Can you tell me about your experiences of living with diabetes in the UK?

Initial Open-ended Probing Questions

Can you tell me about when you were diagnosed with diabetes?

Where were you during the diagnosis, UK or Africa?

How was it for you to be diagnosed with diabetes? If you can recall, what did you think about it?

Can you describe the changes you experienced?

How did you manage the condition?

Intermediate Probing Questions

Has the management of diabetes changed the way you live in the UK?

Do you think there are barriers to your managing your diabetes in the UK?

Are there supports to assist in the management of your diabetes in the UK?

Are there other ways that you would like to improve your management of your diabetes in the UK?

What is the worst (Negative) experiences you have had in managing your diabetes in the UK?

What is the best (Positive) experiences you had in managing your diabetes in the UK?

What will be your ideal way to manage diabetes in the UK?

What are the useful things in helping you managing your diabetes in the UK?

Ending Probing Questions

What are the things you think are valuable to manage diabetes well?

How has your lifestyle changed after your diagnosis?

How has your lifestyle changed since your migration to the UK?

What advice would you give someone that is newly diagnosed?

Is there something that you might not have thought about before that occurred to you during this interview?

Is there anything else you think I should know to help me better understand your experiences?

Is there anything you would like to ask me?

Not all questions will be asked, and they may not be asked in chronological order. In addition, it will be dependent on the participant answers for further question.

In this stage, no interruption once the participants start to discuss their story of managing diabetes, notes will be taking for further questioning after they have finished relating their experience of managing diabetes.

Appendix 7: Bournemouth University Ethics Committee Approval



Research Ethics Checklist

Reference Id	13441
Status	Approved
Date Approved	09/01/2017

Researcher Details

Name	Folashade Alloh
School	Health and Social Care
Status	Postgraduate Research (MRes, MPhil, PhD, DProf, DEng)
Course	Postgraduate Research
Have you received external funding to support this research project?	No

Project Details

Title	Lifestyle factors in the management of type 2 diabetes among African immigrants in the UK
Proposed Start Date of Data Collection	08/01/2017
Proposed End Date of Project	08/03/2018
Supervisor	Ann Hemingway

Appendix 8: Participant Information Sheet



Participant Information Sheet

Invitation paragraph

My name is Alloh Folashade Tawakalitu, I am a student of Bournemouth University (BU) on a university funded doctoral (PhD) programme with the aim to explore the experiences of managing type 2 diabetes among West African immigrants in the UK. This information sheet is sent to you as an invite to take part in a research project. This project involves interviewing you to discuss your management of type 2 diabetes and the experience of living with the disease. Before any decisions are made about if you want to be involved in the study, this sheet provides you with information about my research study that is currently being undertaken via Bournemouth University. You are welcome to ask for further information outside what is provided in this information sheet.

What is the purpose of the project?

African immigrants are three times more likely to develop type 2 diabetes in the UK than the general population. In addition, high cases of type 2 diabetes among African immigrants lead to complications like blindness, kidney disease, heart diseases and even death more than the general population in the UK. African immigrants are among the fastest growing minority groups in the UK. Health inequality has been reported among minority groups in the UK contributing to the high cases of type 2 diabetes among ethnic minority groups. Although there have been studies on type 2 diabetes and experiences of living with the condition among ethnic minority groups in the UK, it has been noted that only few studies have focused exclusively on African immigrants and none on West African immigrants. This study will focus on West African immigrants because of the diversity of Africans immigrants. Therefore, the aim of this study is to understand the experiences of managing type 2 diabetes among West African immigrants.

Why have I been chosen?

You have been invited to take part in this study as you are identified as part of the West African immigrant community in the UK and living with type 2 diabetes. Other people will be recruited to discuss their process of managing type 2 diabetes. There will be other West African immigrants in this project that will be interviewed individually.

Do I have to take part in this study?

Your decision to accept or decline this invitation is voluntary and any decision you take concerning taking part or not will be respected and no questions will be asked. In addition, you are free to withdraw your participation at any stage of the study without giving explanation for your decision. You are free to withdraw up to the point of data processing and become excluded from the study. Information collected will be used up till the point of your withdrawal. Your decision to take part or not in this study will not in any way affect the education or other health related services you receive from community-based black and ethnic minority groups working with immigrants living with type 2 diabetes in the UK.

What would taking part involve?

Individual interview session will be organised with you only once during this study except you request another session. The session is estimated to take about 1 to 2 hours dependent on the information you are willing to provide. I will use interview guide to inform the questions that I will ask and to direct the discussion session. However, most questions I will ask will depend on what information you provide concerning your experience of living with diabetes.

What are the advantages and possible disadvantages or risk of taking part?

This study will allow the voice of ethnic minority group particularly West African immigrants to be heard in the research community. This study is envisaged to add to the knowledge of how factors identified contribute to the management of type 2 diabetes among West African and African immigrants in general. Findings from this study will assist in understanding the process of management of type 2 type 2 among West Africans immigrants in the UK. In addition, cultural aspects of immigrants' lifestyle that will be explored in this study can contribute to considerations during intervention formulations for this group in the UK. The findings can also contribute to information materials and behavioural change information.

Minimal risk is anticipated in this study for both participants and researcher following results of health and safety assessment, if any. It is not expected that any question will make participants uncomfortable, but this cannot be rule out completely depending on the information given by the participants. However, participants are free to decline answering questions that makes them feel uncomfortable. Consent form will be sent to you for approval of your participation in this study.

Will my taking part in this project be kept confidential?

The individual interview sessions will be conducted in private places such as meeting rooms in the support group centre, that are comfortable for you to freely share information about yourself as the study require. This is to provide a space where you can talk freely. The information provided by you and other people in this study will be kept confidential. Permission to audio record the interview sessions will be asked, so information provided can be converted into text after each session for better understanding. The audio recordings will only be used for the purpose of this study and kept confidential. The audio files will be deleted once audio recordings have been converted into word documents with no individual identifying elements. The files will be stored in a BU password secure computer network. The word documents will be kept for five years after this study and deleted after the period according to the BU research ethics code of practice. Only the researcher of this study will be allowed to have access to the audio recordings before transcription and after transcription.

The information from the interview sessions will be presented in the document submitted for my doctoral degree, at academic conferences, at BU postgraduate seminars and conferences. Journal articles may also be published from the findings of this interview session. However, no personal identifying information will be included in the information disseminated from this study.

What type of information will be needed from me?

The audio recordings made during this research will be converted into word document, read several times to generate better understanding of the process of managing type 2 diabetes among West Africans living with type 2 diabetes in the UK and findings will be presented in my PhD document, at conferences, seminars and academic journal for publication. No other use will be made from the files without

getting your written permission and no one beside me (the researcher) will be allowed access to the original recordings.

Contact for further information

For further information/ details about this research, please call:

Alloh Folashade, Faculty of Health and Social sciences, Bournemouth University.
Tel: +44 (0) 1202965734 Email: falloh@bournemouth.ac.uk

Prof Ann Hemingway, public Health & wellbeing, chair European Academy of caring Sciences, Cochrane collaboration member. Faculty of Health and Social sciences, Bournemouth University. Tel: +44 (0) 1202962796 Email: ahemingway@bournemouth.ac.uk

Complaints

If you have any concerns or complains about any aspect of this research, please contact:

Professor Vanora Hundley, Deputy Dean for Research and Professional Practice, Faculty of Health & Social Sciences, Tel: +44 (0) 1202965206 Email: vhundley@bournemouth.ac.uk

Thank you for taking your time to read this information sheet.

Appendix 9: Participant Consent form



Participant Agreement Form

Full title of project:

Exploring diabetes management with West-African immigrants living in the UK: A constructivist grounded theory study.

Name, position and contact details of researcher: Alloh Folashade Tawakalitu, PhD student, Email: faloh@bournemouth.ac.uk Tel: 01202965734

Name, position and contact details of supervisors

Prof Ann Hemingway, Public Health & Wellbeing, chair European Academy of caring Sciences, Cochrane collaboration member. Faculty of Health and Social sciences, Bournemouth University. Tel: 01202962796 Email: ahemingway@bournemouth.ac.uk

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Tick Here

I have read and understood the participant information sheet for the above research project.	
I confirm that I have had the opportunity to ask questions.	
I understand that my participation is voluntary.	
I understand that I am free to withdraw up to the point where the data are processed and become anonymous, so my identity cannot be determined.	

During the study, I am free to withdraw without giving reason and without there being any negative consequences.	
Should I not wish to answer any particular question(s), I am free to decline.	
I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the outputs that result from the research.	
I understand taking part in the research will include being recorded (audio) but that these recordings will be deleted once transcribed.	
I agree to take part in the above research project.	

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature
<p><i>This form should be signed and dated by all parties after the participant receives a copy of the participant information sheet and any other written information provided to the participants. A copy of the signed and dated participant agreement form should be kept with the project's main documents which must be kept in a secure location.</i></p>		

Appendix 10: Participants' Demographic Information

Participant	Age	Gender	Length of diagnosis	Years of migration	Employment
Bobaro	57	M	10	22	No
Ken	48	M	19	17	Yes
Orisa	52	M	13	10	No
Bamba	65	F	15	40	No
Junde	82	M	21	34	No
Lolily	63	F	14	46	No
Konge	45	M	15	10	Yes
Dee	33	M	02	05	Yes
Bolu	44	F	11	10	Yes
Wemi	56	F	05	07	Yes
Mam	64	F	07	20	No
Yeriyaya	77	M	16	12	No
Kinjile	72	M	18	15	No
Gambo	42	M	12	07	Yes
Kantita	40	F	04	08	Yes
Bolula	48	F	12	10	Yes
Yaranto	67	F	20	10	No
Mange	57	M	10	12	Yes
Kilanla	65	F	19	08	Yes
Vero	55	F	10	06	Yes
Nimbabo	49	M	10	15	Yes
Zurisa	69	M	22	25	No

Balabi	78	M	25	19	No
Josera	42	M	10	05	Yes
Sisato	39	M	05	04	Yes
Sambila	75	M	14	16	No
Hena	50	F	06	10	Yes
Wilo	63	F	21	11	Yes
Kenfa	52	M	16	10	Yes
Dorima	37	M	06	02	Yes
Malisaya	44	M	11	04	Yes
Mubisa	69	F	12	07	Yes
Kelora	57	M	10	02	Yes
Egbede	64	M	11	17	No

Appendix 11: Manual Data analysis

<p>7 Interviewer: Okay so were you diagnosed immediately or did you start to fill symptoms before going 8 for the test?</p>	
<p>9 Participant: I was already been managed for other health conditions and I notices a symptom of 10 diabetes which is frequency of urination and on consultation of my doctors, I asked that I was having 11 to drink a lot and a lot urinate frequently and they agreed to start the process of diagnosis of 12 diabetes by taking my blood sample and getting baseline of my blood glucose and specific fasting 13 blood glucose test and after the test I was given my diagnosis of diabetes mellitus. This was in 2003</p>	<p>Comment [FA3]: Dealing with another health condition</p> <p>Comment [FA4]: Noticing Symptoms</p> <p>Comment [FA5]: Having test done</p> <p>Comment [FA6]: Diagnosis process</p>
<p>14 Interviewer: Okay so when you were diagnosed, how did you feel about it?</p>	
<p>15 Participant: How did I feel about it? Thinking..... Ummm... an extra...umm illness to ...extra illness to 16 add to..... ummmmmmm....long list of illness... but the ummm... the explanation for my diabetes was 17 out at the excess iron in my body and some of the that iron being deposited in my pancreas and 18 damaging the function and that was about the background of my development of diabetes. 19 Ummmm... the reason for the excess iron in my body is that for over several years I have been 20 receiving blood transfusion because of ummm... bone marrow cancer. Bu that time I had been 21 receiving blood transfusion for over 14yrs..ummm with blood transfusion, there is a build-up of 22 iron...ummm especially the storage form of ferritin... ummm... I had a high level of ferritin in my body 23 and that was thought to have some damaging effects to my internal organ including pancreas</p>	<p>Comment [FA7]: Seen as extra burden</p> <p>Comment [FA8]: Finding comfort in diabetes cause</p> <p>Comment [FA9]: Distancing from cause</p> <p>Comment [FA10]: Diabetes diagnosis in addition to cancer</p>
<p>24 Interviewer: So how did this affect the insulin... is it that there was little or no production of insulin 25 or was it that the body was resistance to the insulin produced.</p>	
<p>26 Participant: It has to do more with resistance because I have not had any hormonal assay to 27 determine what level of insulin my body is producing... I think it (will) have more to do with resistance 28and as you know, diabetes is relative absolute or low production of insulin..ummmmm... so it was 29</p>	<p>Comment [FA11]: Having no control on diabetes development</p>
<p>30 Interviewer: This is an interesting one as most people have diabetes and it leads to complication of 31 other diseases but in your case it is other health condition that brings out your 32 diabetes...Obviously...did anything change... obviously you have been seeing doctors so that means 33 you were doing somethings</p>	
<p>34 Participants: Yes with the diagnosis of diabetes mellitus I took part in some sessions of 35 ...ummmmm...nutritional education. We were at the session in endocrine diagnostic centre of 36 Bournemouth hospital where the diagnosis was made ...ummm and ... there was emphasis of 37 changes in diet... and exercise as a form of managing diabetes... ummmmm... I was already aware of 38 that but I choose to go through every session and the lectures... the nutritionist was involved so I 39 attended all of the sessions. They gave us food types and how we should approach...what kind of 40 items to combine and umm... generally given advice on diet and exercise too but these were things I 41 was already used to know as of my health... I would say I also benefitted from the sessions</p>	<p>Comment [FA12]: Getting management support</p> <p>Comment [FA13]: Diabetes management education</p> <p>Comment [FA14]: Getting support from hospital</p> <p>Comment [FA15]: Making the choice to learn more</p> <p>Comment [FA16]: Change of diet and exercise</p> <p>Comment [FA17]: Getting lifestyle management advice</p>

Appendix 12: Nvivo data analysis

<input type="radio"/> Accessing healthcare		1	1
<input type="radio"/> avoiding disclosure		1	7
<input type="radio"/> Avoiding sugar		2	2
<input type="radio"/> being healthy eater		2	3
<input type="radio"/> challenging diagnosis		1	1
<input type="radio"/> changing diet		2	12
<input type="radio"/> Emotions of diagnosis		1	1
<input type="radio"/> Explaining symptoms		1	1
<input type="radio"/> Getting diagnosed		2	3
<input type="radio"/> Getting misdiagnosed		1	1
<input type="radio"/> Going for check up		1	1
<input type="radio"/> going to lectures		1	4
<input type="radio"/> Having other issues		1	3
<input type="radio"/> Having sweet craving		2	3
<input type="radio"/> hoping for cure		2	4
<input type="radio"/> Improving mobility		2	7
<input type="radio"/> lacking knowledge		2	3
<input type="radio"/> living with it		2	4
<input type="radio"/> Managing by self		2	2
<input type="radio"/> meeting recommendations		1	2
<input type="radio"/> Noticing symptoms		1	2
<input type="radio"/> preparation struggle		1	4
<input type="radio"/> receiving support		2	3
<input type="radio"/> Research Journal		1	1
<input type="radio"/> Seeing silver lining		1	2
<input type="radio"/> seeking medical help		1	1
<input type="radio"/> setting goal		1	1
<input type="radio"/> stating better healthcare		1	1
<input type="radio"/> struggling		1	7

Appendix 13: Research Dissemination

Academic Papers

- Regmi, P., Kurmi, O., Aryal, N., Pant, P., Banstola, A., **Alloh, F.** and van Teijlingen, E., 2016. Diabetes prevention and management in South Asia: A call for action. *International Journal of Food, Nutrition and Public Health*, 8 (2), 107-116.
- Alloh, F.**, 2017. Increasing Suicide rate in Nigeria. *African Health Journal* (Accepted manuscript).
- Alloh, F.** and Regmi, P., 2017. Effect of economic and security challenges on the Nigerian Health Sector. *African Health Science*, 17 (2), 519-592.
- Regmi, P., **Alloh, F.**, Pant, P., Simkhada, P. and van Teijlingen, E., 2017. Mental health in BME groups with diabetes: an overlooked issue? *The Lancet*, 389 (10072), 904-905.
- Alloh, F.**, 2018. Improving Diabetes Outcome: A Need to Understand Management among Africans Living with Diabetes in the UK. *J Primary health care and gen practice* 2 (1).
- Alloh, F.**, Regmi, P., Onche, I., van Teijlingen, E. and Trenoweth, S., 2018. Mental health in low-and middle-income countries (LMIC): Going beyond the need for funding. *Health Prospect: Journal of Public Health*, 17 (1), 12 - 17.
- Alloh, F.**, Hemingway, A. and Turner-Wilson, A., 2018. Understanding lifestyle contribution in the management of type 2 diabetes among African immigrants living in the UK. *European Journal of public health*, 28 (1).
- Alloh, F.**, Hemingway, A and Turner-Wilson, A. 2019 Systematic review of diabetes management among black African immigrants, white and South Asian populations. *Journal of Global health report* (In press)
- Alloh, F.**, Hemingway, A and Turner-Wilson, A. Navigating recruitment challenges among minority groups: Strategies for Early Career Researchers. *International Journal of Social Research Methodology* (Under review).

Conference Presentations

Alloh, F. and Mahato, P. 2018 Health research, community engagement and cultural contribution to health in low and middle-income countries: Experiences from Nepal and Nigeria. *In: Postgraduate researchers' Live Photo Exhibition, Bournemouth University, December 2018.*

Alloh, F., Hemingway, A. and Turner-Wilson, A. 2018. Theoretical explanation for Type 2 diabetes management among West-African immigrants living in the UK. *In: International conference of global health and epidemiology, Wolverhampton August 2018.*

Alloh, F., Hemingway, A. and Turner-Wilson, A. 2018. Grounded Theory of diabetes management among West Africans living with diabetes in the UK. *In: International conference on Interdisciplinary Social Sciences, Granada Spain July 2018.*

Alloh, F. Hemingway, A. and Turner-Wilson, A. 2018. Understanding lifestyle contribution in the management of type 2 diabetes among African immigrants living in the UK. *In: 1st World Congress on Migration, Ethnicity Race and Health, Edinburgh May 2018.*

Alloh, F. Hemingway, A. and Turner-Wilson, A. 2018. Striving to be healthy: Experience of diabetes management among African immigrants living in the UK. *In: Postgraduate Researchers' Conference, Bournemouth University March 2018.*

Alloh, F., Hemmingway, A. and Turner-Wilson, A., 2017. Contribution of lifestyle factors in the management of type 2 diabetes among African immigrants in the UK. *In: The 10th Conference of the International Society for Health and Human Rights. Novi Sad, Serbia. November 2017.*

Alloh, F. Hemingway, A. and Turner-Wilson, A., Contributing lifestyle factors associated with type 2 diabetes among African immigrants in the UK: A pilot study findings. 2017. *In: PhD symposium at Liverpool John Moore's University July 2017*

Alloh, F., Regmi, P., Puspa, P., Simkhada, P. and Van Teijlingen. 2017. Mental health among ethnic groups with diabetes in the UK. *In: 15th Britain-Nepal Academic Council (BNAC) Nepal Conference, April 2017, Bournemouth.*

Alloh, F. Hemingway, A. and Turner-Wilson, A., 2017. Lifestyle factors in the development of diabetes among African immigrants in the UK: A systematic review. *In: 10th Postgraduate researchers' conference, Bournemouth University March 2017*

Presentations at public engagements

Alloh, F. 2019. Introduction to Grounded Theory *In: Exploring Evidence to Guide Professional Practice unit for your undergraduate second year Health and Social Care students' seminar, Bournemouth University, March 2019.*

Alloh, F. 2017. Contributing lifestyle factors associated with type 2 diabetes among African immigrants in the UK. *In: Faculty of Health and Social Sciences Research Seminar Series Bournemouth University, May 2017.*

Alloh, F., Hemingway, A. and Turner-Wilson, A., 2016. Exploring Lifestyle factors among African migrants living with Type 2 diabetes in UK. *In: Festival of Learning at Bournemouth University July 2016.*