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The Effectiveness of a Health Coaching Educational Intervention in Reducing the Symptoms of Chronic Type 2 Diabetes Among Black Residents of the United Kingdom

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Abstract

Black African and Caribbean populations in the United Kingdom (UK) experience a disproportionate burden of type 2 diabetes (T2D), characterized by higher prevalence rates, earlier onset, and an increased risk of severe complications compared with White populations. Despite this elevated risk, there remains limited availability of culturally tailored, evidence-based interventions designed specifically for these communities. This dissertation argues that culturally sensitive lifestyle interventions, adapted to the social and cultural realities of Black African and Caribbean populations in the UK, are critical for improving diabetes outcomes.

The study evaluates the impact of a 12-week, one-to-one health coaching intervention developed specifically for adult individuals from Black African and Caribbean populations in the UK living with T2D. The intervention employed motivational interviewing techniques and culturally appropriate lifestyle recommendations to address structural and sociocultural barriers to self-management, with the aim of improving metabolic health outcomes. Key outcomes assessed included body weight, blood pressure, glycated haemoglobin (HbA_1c), sleep quality, and overall well-being.

The quantitative component of the study involved 16 participants aged between 40 and 75 years, comprising an intervention group (n = 8) and a control group (n = 8). The intervention group demonstrated statistically significant improvements across all measured outcomes, including reductions in body weight and HbA_1c, as well as enhanced self-reported well-being. These results were confirmed using paired-samples and independent-samples *t* tests. Complementary qualitative analysis identified key lifestyle challenges, including emotional eating, food cravings, stress, and limited access to healthy food options, through thematic analysis of participant interviews.

Overall, the findings suggest that culturally tailored, one-to-one health coaching represents a promising and effective strategy for improving both clinical and psychological outcomes among Black African and Caribbean populations in the UK living with T2D. By adopting a patient-centred and contextually relevant approach, this research contributes valuable evidence to inform future diabetes policy, practice, and intervention design for high-risk ethnic minority populations.

Dedication

This dissertation is dedicated to the cherished memory of my late mother, Mrs. Esther Y. Rockson, who passed away in 2021 due to complications from diabetes. Her unwavering strength, guidance, and sacrifice continue to inspire my pursuit of knowledge and excellence. This work stands as a testament to her enduring legacy.

Acknowledgments

I wish to express my sincere gratitude to Professor Catherine Alter and Dr. Nick Deal for their invaluable support and guidance throughout my investigations and the course of this study. Their expertise, encouragement and unwavering commitment were instrumental in the completion of this work.

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CHAPTER 1: Introduction

The growing burden of chronic type 2 diabetes (T2D) represents a significant global public health challenge, with disproportionate impacts observed among Black populations. In the United Kingdom (UK), Black African and Caribbean communities are significantly more likely to develop T2D than their White counterparts, experiencing earlier disease onset, more severe progression, and an increased risk of complications (Hicklin, 2018). Against this backdrop, this study investigates the effectiveness of a health coaching educational intervention in reducing the symptoms of T2D among Black residents in the UK.

Poorly managed T2D is associated with severe complications, including neuropathy, impaired circulation, renal failure, and lower-limb amputation, all of which contribute to increased morbidity and mortality (Diabetes UK, 2019). Beyond individual consequences, the growing number of individuals living with diabetes places substantial financial and operational pressure on the UK's National Health Service (NHS). These pressures are intensified by persistent ethnic health inequalities, highlighting the need for culturally sensitive and scalable interventions.

This dissertation is structured into five chapters. Chapter One introduces the research focus, outlines the rationale for the study, and presents the research problem and questions. Chapter Two provides a comprehensive review of the literature. Chapter Three details the research design and methodology. Chapter Four presents and analyses the findings. Chapter Five discusses implications, limitations, and recommendations for practice, policy, and future research.

Background and Context

Type 2 diabetes (T2D) is a chronic metabolic condition characterised by persistent hyperglycaemia resulting from the body's inability to produce sufficient insulin or effectively utilise the insulin produced. Over time, elevated blood glucose levels can lead to significant complications if the condition is not adequately managed (NIH, 2017). T2D is the most prevalent form of diabetes in the United Kingdom. Diabetes UK estimates that 90% of the six million individuals living with diabetes between 2022 and 2023 have T2D. Evidence further indicates that Black ethnic groups, particularly Black African and Black Caribbean populations, are disproportionately affected (Ntuk et al., 2014).

While T2D has traditionally been associated with ageing, research demonstrates earlier onset among Black British and South Asian populations (Public Health England, 2016; Goff, 2019; Ahmed et al., 2023). Social determinants of health, including housing conditions, employment opportunities, access to green space, and health literacy, contribute to lifestyle behaviours that increase diabetes risk. As a member of this demographic, I have directly observed the incidence of this disease within my community and witnessed the challenges associated with sustaining long-term lifestyle change.

Research has explored epidemiological, biological, and social explanations for elevated prevalence. Pham et al. (2019) reported higher likelihood of T2D diagnosis among Black ethnic groups. Biological explanations include insulin resistance and differences in fat distribution (Rosenbaum et al., 2023), while behavioural and clinical factors include dietary patterns, physical inactivity, sleep quality, and stress (Ahmed et al., 2023). Cultural factors, including attitudes towards body size and traditional dietary practices, may also influence engagement with healthcare (Wolfe, 2000; Omodara et al., 2022).

Despite recommendations advocating fruit- and vegetable-rich diets (Leh et al., 2014; Guo et al., 2020), outcomes remain mixed. Ahmed et al. (2023) found that Black residents adhering to dietary guidelines still experienced disproportionately high rates of T2D. A critical limitation of existing research is the aggregation of diverse ethnic populations into a single category, which risks obscuring meaningful differences (Ntuk et al., 2014; Pham et al., 2019).

Problem Statement

Evidence accumulated over the past decade demonstrates that T2D is disproportionately prevalent among Black communities in the UK (Goff, 2019; Pham et al., 2019; Alloh et al., 2021; Seewoodhary, 2021). Differences in prevalence and outcomes appear strongly influenced by social inequalities, lifestyle factors, and challenges in disease management (Kolb & Martin, 2017; Bekele et al., 2019; Shrestha et al., 2019). Lifestyle determinants include poor dietary quality, physical inactivity, inadequate sleep, prolonged sedentary behaviour, tobacco and alcohol use, and psychosocial stress.

Health coaching has been proposed as a potentially effective strategy for addressing these challenges by promoting self-management and behaviour change. However, much of the existing evidence is derived from White, middle-class samples, raising concerns about generalisability (Griffith et al., 2024). There remains limited empirical research examining culturally tailored health coaching interventions for Black African residents living with T2D in the United Kingdom.

Research Questions

1. What are the lifestyle choices of a group of adult Black African residents of the United Kingdom?
2. How effective is a 12-week, one-to-one health coaching programme in improving metabolic health outcomes, including body weight, blood pressure, glycated haemoglobin (HbA_1c), sleep quality, and general well-being?

Justification of the Study

This study addresses a persistent gap in current literature. Although Black African communities experience disproportionately high rates of T2D, there remains limited empirical evidence examining lifestyle patterns and culturally specific influences on health behaviour. Existing research frequently aggregates diverse ethnic groups under broad classifications, limiting the precision of intervention design (Ahmed et al., 2023; Ntuk, 2024).

Summary

This chapter has outlined the rationale and context for examining the effectiveness of a health coaching educational intervention in the management of T2D among Black residents in the United Kingdom. The chapter highlights the disproportionate prevalence of T2D within Black communities and the need for culturally sensitive interventions that address both clinical outcomes and lived experience.

CHAPTER 2: LITERATURE REVIEW

The rising prevalence of T2D represents a significant challenge to public health in the United Kingdom, placing an immense burden on the healthcare system. Treating diabetes and its complications currently costs the NHS an estimated £14 billion annually (Diabetes UK, 2023), a figure projected to escalate as over 5.5 million individuals are expected to be living with diabetes by 2030 (Lacobucci, 2021). Black African and Caribbean populations in the UK are disproportionately affected, experiencing higher rates of diagnosis, earlier onset, and greater risks of severe complications such as cardiovascular disease, kidney failure, and amputations (Public Health England, 2018; WHO, 2016). Existing research shows that these disparities are driven by a complex interaction of genetic predisposition, environmental exposures, lifestyle factors, and structural socioeconomic inequalities (Tillin et al., 2013). However, diabetes care is clinical and managerial and there is a pressing need for interventions that go beyond conventional medical management to address the broader social and behavioural determinants of health among high-risk populations.

Among the emerging strategies for managing chronic illnesses like T2D, health coaching educational interventions have shown considerable promise in empowering patients and supporting sustained lifestyle change. Health coaching shifts the focus from passive receipt of medical advice to active patient engagement, goal-setting, and self-management, improving clinical outcomes across a range of chronic diseases (Wolever et al., 2010; Kivelä et al., 2014). Culturally tailored coaching interventions have been particularly effective in improving glycaemic control and promoting better self-care among minority ethnic groups facing structural barriers to health services (Attridge et al., 2014). This study therefore seeks to evaluate the effectiveness of a culturally sensitive health coaching intervention designed specifically for

Black residents in the UK, who remain underserved within mainstream healthcare delivery. By assessing the impact of structured coaching on symptom management and health behaviour, the study aims to contribute to the growing evidence base for more inclusive and equitable chronic disease care models.

This chapter critically reviews the literature relevant to the study's focus. It begins by outlining the search strategy employed to identify and select pertinent studies, followed by the operational definitions for key terms used throughout the research. It then examines the structure and challenges of the UK's healthcare system in addressing the needs of minority populations and explores the incidence and impact of T2D among Black African and Caribbean communities. Subsequently, the chapter discusses the development and application of health coaching interventions in chronic disease management, evaluating both their effectiveness and limitations. By synthesizing these findings, the chapter identifies key gaps in the existing literature, particularly concerning the cultural adaptation of interventions, thus establishing the rationale for the health coaching model adopted in this study.

Literature Search Strategy

The purpose of this literature search strategy is to access credible evidence-based references sufficient to gain an understanding of the effectiveness of health coaching for ethnic minorities and to identify gaps in the literature (Grewal et al., 2016). The search strategy begins with the research question: How effective is health coaching educational intervention in reducing the symptoms of chronic Type2 Diabetes (T2D) among Black residents of the United Kingdom (UK)? This question guided my literature search. For instance, this question influenced where (databases) my sources came from, how many and what types of studies I am interested in (Heath et al., 2022). The search can be broad or specific depending on the aim of the study

(Snyder, 2019). However, the aim of this study, which is to "determine the effectiveness of health coaching educational intervention in reducing chronic T2D symptoms in Black UK residents of African origin", indicates the specificity of the search. For this reason, the PICO model was further employed to narrow down search terms, which can be used in conjunction as a search strategy, as outlined below. The PICO model is a commonly used tool in clinical and public health-related studies to identify key components within the study (Higgins, 2011; Eriksen & Frandsen, 2018).

P - Patient Population: black UK residents of African origin between 45-75 years, ethnic minority, Afro-Caribbeans.

I - Intervention: health coaching, diabetes educational intervention, lifestyle intervention, self-management support

C - Comparison: other diabetes care management methods, control groups, pre/post test

O - Outcome: reduction of symptoms, symptom control, HbA_1c, blood sugar, prevention, symptom management, intervention effectiveness.

To begin the search, key concepts and keywords including relevant synonyms and abbreviations as suggested by Bramer et al. (2018) were extracted from the identified research question as seen in the table below.

Table 2.1
Literature Search Keywords and Concepts

Keywords	Synonyms	Abbreviations
Type 2 Diabetes	Type Two Diabetes	T2D
	Type 2 Diabetes Mellitus	T2DM
	Chronic Type 2 Diabetes	Chronic T2D
	Adult-onset diabetes	
	Hyperglycaemia / Hyperglycaemia	
	Health Coaching	HC

Keywords	Synonyms	Abbreviations
Health Coaching Educational Intervention	Health Coaching Intervention	HCI
	Health Education Intervention	
	Telephonic Health Coaching	THC
Black residents	Black ethnics	
	Black ethnic groups	
	Black communities	
	Black, Asian and minority ethnic	BAME
	Black and minority ethnics	BME
	Black British	
	Black UK citizens / residents	
United Kingdom	Great Britain; Britain	UK
	England and Wales	
	Scotland	
	Northern Ireland	NI

The search encompassed various medical and public health databases including PubMed, Web of Science (WoS), Cochrane Library, and Google Scholar to ensure a thorough search, grey literature and other specialised (official) publications such as BMC Public Health and Diabetes UK were also used. Furthermore, during the search, Boolean operations (AND, OR, NOT) and truncations (*) were used to combine the keywords to create more comprehensive search queries. The language was also taken into consideration such that the search queries were done in both American and British English.

My initial general search employing titles, abstracts, full-text searches, and snowballing generated 254 sources, and then exclusion and inclusion criteria were applied to ensure the relevance of the final selection.

Exclusion criteria:

- Studies focused on other types of diabetes.
- Interventions not related to health coaching or education.

- Non-Black UK residents
- Non-peer-reviewed articles

Inclusion criteria:

- Studies published in English
- Studies conducted in the UK
- Interventions involving health coaching or education.
- Studies involving Black UK residents with T2D.
- Peer-reviewed articles, systematic reviews, and clinical trials

The literature was further screened using the exclusion and inclusion criteria stated above to arrive at the final 30 sources. After this, the full text of the screened literature was retrieved for the final synthesis.

Operational Definitions of Terms

In this dissertation, I employed several key terms that are foundational to the discussions and analyses that follow. The definitions provided here not only clarify the terminology used but also highlight the specific nuances and contexts in which these terms are applied within the framework of my study. By establishing these definitions, I aim to provide a solid conceptual foundation that supports the interpretation of my findings and the overall coherence of the dissertation.

Black African and Caribbean Groups. This term refers to Black people or populations in the UK, encompassing individuals of African and Caribbean descent. It also includes UK immigrants from African and Caribbean countries. These groups are often grouped together in other studies (Ntuk et al., 2014; Pham et al., 2019); however, this study distinguishes between African and Caribbean Blacks populations.

Black, Asian and Minority Ethnic (BAME). Black ethnic minorities from South Asian, African, and other minority origins have also often been grouped in the study of T2D and are often grouped together under the acronym BAME. The other minority groups include West Indians, Caribbeans, African-Caribbeans, Black British, and other mixed ethnic backgrounds (GOV.UK, 2021). The Asian ethnicity consists of South Asian nationals from India, Pakistan, and Bangladesh (GOV.UK, 2021). While the BAME acronym offers a useful heading for comparisons between minority and majority groups, it groups together ethnic groups with considerable heterogeneity in terms of risk factors and health status. As such, the vast diversity of the (BAME) group makes the results of past T2D studies analytically problematic because of the evident cultural, socio-economic, and genetic differences between these ethnic groups which may influence the development and intervention of T2D.

Body Mass Index (BMI). Body Mass Index (BMI) is a measure calculated by dividing a person's weight in kilograms (or pounds) by the square of their height in metres (or feet) (CDC, 2024). A high BMI can indicate high body fat (obesity), which can lead to the development of T2D and health complications in T2D patients (Klein et al., 2022).

Diet/Dietary Habits/Patterns. The way people consume food can be detrimental to their health and well-being. Fruits and vegetable-based diets have been found to be beneficial in T2D interventions (Guo et al., 2020; Ahmed et al., 2023).

Health Coaching Educational Intervention. Health coaching describes an intervention for supported self-management to empower individuals to make more thoughtful, informed, and educated decisions regarding their health and lifestyle (NHS England, 2023). Health Coaching Educational Intervention is a recent health service option being explored for the management of T2D, and it forms the premise for this study.

HbA$_1$c. HbA$_1$c, or glycated haemoglobin, is a form of haemoglobin that is chemically linked to glucose. It reflects average blood glucose levels over two to three months and is used to monitor long-term glycaemic control in individuals with diabetes (American Diabetes Association, 2020).

Health Inequality (or Health Disparity). Health inequality or disparity "relates to preventable differences in the burden of disease between population groups" (Whyte et al., 2019), and exacerbated by issues like poverty, discrimination, inadequate access to quality healthcare, and differences in income and opportunity. Minority ethnic groups in the UK experience health inequalities despite the presence of universalised healthcare. For T2D various inequalities are implicated in the diagnosis, follow-up, and management of health complications.

Hyperglycaemia. Hyperglycaemia is a condition characterised by an excessive amount of glucose in the blood. It is a common feature of diabetes (T2D) and can lead to various health complications if not managed properly (Demir et al., 2021).

Insulin Resistance. Insulin resistance is a condition in which the body's cells do not respond effectively to insulin, leading to elevated blood glucose levels (NIH, 2018). It is a key feature of T2D.

Lifestyle Habits. Lifestyle habits in the context of this study refers to daily human activities that influence the state of health and overall well-being of an individual either positively or negatively. Poor lifestyle habits like alcohol consumption, smoking, poor sleep quality, sedentary lifestyle, among other factors, have been linked to a higher prevalence of T2D complications in black ethnic populations (Hills et al., 2018). A relationship has also been established between healthy lifestyle habits and positive outcomes in T2D intervention (Ahmed et al., 2023).

Motivational Interviewing. In the context of healthcare, motivational interviewing is a therapeutic intervention that encourages people to adopt healthier lifestyles and implement behavioural changes to improve their health. Motivational interviewing is an aspect of health coaching educational intervention for T2D patients recognised among T2D healthcare workers for its effectiveness (Sherifali et al., 2019; Sieczkowska et al., 2021).

Nutrition. Nutrition refers to the process by which organisms obtain and utilise food necessary for health. Lack of access to healthy foods leads to poor health outcomes (Bell, 2022). Nutrition is used in the same context as diet/dietary habit (see diet/dietary definition above) in this study.

Obesity. Obesity is defined as abnormal or excessive fat accumulation that presents a health risk. Obesity or being overweight is one of the contributing factors to developing T2D (WHO, 2023).

One-On-One Health Coaching. One-on-one health coaching is a personalised intervention where an individual works with a health coach to focus on diabetes control and lifestyle improvement. This intervention aims to lower HbA_1c levels and promotes healthy diets in the treatment of patients with T2D (Ching-Ling Lin, 2021).

Type 2 Diabetes (T2D). T2D is a chronic metabolic condition characterised by high blood glucose levels (hyperglycaemia) due to insulin resistance (the body's inability to effectively use insulin) and insufficient insulin production by the pancreas (NHS, 2023).

Socioeconomic and Structural Determinants of T2d Among Black Populations in the Uk

Historically, black ethnic groups in the UK (South Asian, African, and Caribbean origins) have almost double the risk of getting diagnosed with diabetes compared to white and other

ethnic groups (Whyte et al., 2019). Numerous studies have identified that there is prevalence of T2D among the black ethnic minorities in the UK and there are factors that contribute to this prevalence.

Several explanations have been suggested to explain this racial disparity in rates of T2D diagnoses. Among the most notable factors is a strong correlation between T2D and socioeconomic status, with global meta-analyses showing that low socioeconomic status is associated with a 40-50% increase in T2D risk over the life course (Hill-Briggs et al., 2020). Statistics from UK health authorities mirror these global rates. Public Health England estimates that T2D is 60% more common in the lowest socioeconomic quintile in comparison to the highest. According to government estimates, just under 60% of black UK residents fall into the lowest two socioeconomic quintiles (roughly twice the rate of white deprivation), meaning that the health risks associated with socioeconomic deprivation are particularly acute for this population (Whyte et al., 2019; Tatulashvili et al. 2020; Pratt 2021; Nagar et al., 2021). The study by Whyte et al. (2019) on the existence of health disparity in the diagnosis (glycaemic control), monitoring (disease monitoring), and treatment of T2D (prescription) based on socioeconomic status (SES) and ethnicity. The findings showed poor glycaemic (blood sugar) control and disease monitoring among individuals with low SES. A similar study by Pham et al. (2019) showed that T2D was more prevalent among the Black ethnic group than the white group used in the study, though the findings were irrespective of SES of the patients. Another study (Tatulashvili et al., 2020) on the relationship between SES and T2D, showed that patients living in low-income communities showed a higher risk of T2D complications. Although Tatulashvili et al. (2020) avoided assessing ethnicity as a variable in their study, their findings align with

Topriceanu et al.'s (2021) and Pratt's (2021) conclusions that black diabetic patients in the UK are exposed to elevated risks and additional health complications.

Untangling the relationship between socioeconomic status (SES), health inequalities, and diabetes outcomes is complicated, because SES is a proxy for a wide range of associated inequalities and disparities (Nagar et al., 2021; Piccolo et al., 2014; Piccolo et al., 2016). First, low SES can restrict access to health services or undermine the quality of service even in the context of universalised healthcare. In exploring how SES correlates with prevalence of T2D in the UK, Tatulashvili et al. (2020), identified factors responsible for this relationship to include inadequate outpatient services, poor access to healthcare resources, high cost of treating diabetes complications, low patient self-management, and inadequate public health policies targeting low SES communities. Tatulashvili et al.'s (2020) work also showed that patients with diabetes complications (who belong to low SES levels) are less likely to be involved in follow-up or engage with services to the same level as high SES counterparts.

Second, a range of community features that indirectly aid or imperil health, like limited access to shops or supermarkets selling healthy food, high density of takeout food outlets, crime rates, noise pollution, inadequate exercise facilities, and lack of green space, can all induce psychological stress and restrict autonomy. Such factors restrict choices, limit opportunities, make it more difficult to follow healthy behaviours, like getting enough sleep, exercise, and appropriate nutritional intake, and are therefore indirectly associated with increased risks of T2D (Spencer Bonilla et al., 2016; Volaco et al., 2018).

Research has consistently shown that inner-city urban poverty is strongly correlated with access to healthy foods, appropriate outdoor spaces, and opportunities for exercise. For example, 40% of black London residents live in wards with the least green spaces, in comparison to 13%

of white residents. Studies have also shown that Black populations tend to work in service industry areas, especially in the fast-food industry, where the presence of unhealthy foods increase (Toprecenue et al., 2021). Meanwhile, recent research on so-called healthy “food deserts” and “food apartheid" has drawn attention to how lower SES ethnic minorities are disadvantaged by a lack of culturally appropriate healthy food outlets (Smith, & Thompson, 2022). One commentator has dryly joked that in certain areas of inner-city London, ‘it is easier to buy a vape than an apple’.

Some scholars have suggested that these inequalities in access to community resources are best theorised as a latent effect of systematic racism and government policies that marginalise Black communities. In such accounts, “structural discrimination” has been implicated in exclusions related to housing, access to education, employment, and healthcare for Black communities, which all impact T2D rates and the experience of the disease (Agarwal et al, 2023). This does not mean that any single party or politician is intentionally creating policies that exclude ethnic minorities, but rather that there remain features of systems that government policy has not remedied or is agnostic about. A good example of this agnosticism is one size fits all public health policies, which are designed with majority populations in mind but may not be appropriately tailored to minority populations (Alshamsan et al., 2012). For instance, in 2004, the government introduced sweeping pay-for-performance (P4P) targets for the management of T2D. While P4P improved glycaemic control and health outcomes for white patients, it has failed to improve T2D outcomes for Black communities (Millett et al., 2007). Several reports have suggested that P4P prioritises patients who are easier to manage and disincentivises spending time with patients with complex needs or overlapping health inequalities (Millet et al, 2009). At

the very least, P4P quality frameworks were put in place without considering cultural relevance to minorities or disparity in outcomes across groups.

Another area which may affect T2D outcomes is related to people's interpersonal lives and social connections, which can also be stratified by SES. For example, researchers have linked poor health outcomes with lack of stable relationships for a wide range of communicable and non-communicable diseases. Without exception, when social relationships and community resilience are low, health outcomes are worse (DeJesus et al., 2024). The kind of factors that fall under this heading relate to whether someone has a supportive family or partner, as well as the durability and security of family relationships. Lifestyle medicine researchers have consistently highlighted "social connectedness" as a core pillar of Lifestyle Medicine because the quality and durability of relationships are both a cause and consequence of increased health risks. At the extreme end, relationships can be undermining rather than supportive. For example, where someone has an abusive or controlling partner, family members are incarcerated or involved in criminality, or where drug and substance abuse are common in close social networks. While it is outside the parameters of this dissertation to dig into statistics for all these inequalities, such features are persistently more common in lower Socio-economic strata and can impinge directly or indirectly on both T2D and the lifestyle factors responsible for it.

For all the above reasons, scholars have found it helpful to view T2D as resulting from a range of causes, which flow from the policy/societal level all the way through to the individual or biological level. One way of conceptualising this is through a social- ecological lens, which views health and healthy behaviours as couched in a social ecology theorised at various levels. In figure 1 below, the levels are individual, relationships, community, and society, where each is seen contributing to overall health and/or health risks. This should not be understood to mean

that each social-ecological dimension is always considered equal; the model is not designed to demonstrate exactly where or what "causes" a health problem, but to provide a heuristic of the levels (Whittemore et al., 2004). Naturally, if an individual experiences stressor in each domain, their health risks would be higher, and it will be more difficult to establish healthy behaviours. By extension, the purpose of the previous analysis was to show that socio-economic inequalities are always associated with more difficult situations for each dimension of the dimensions.

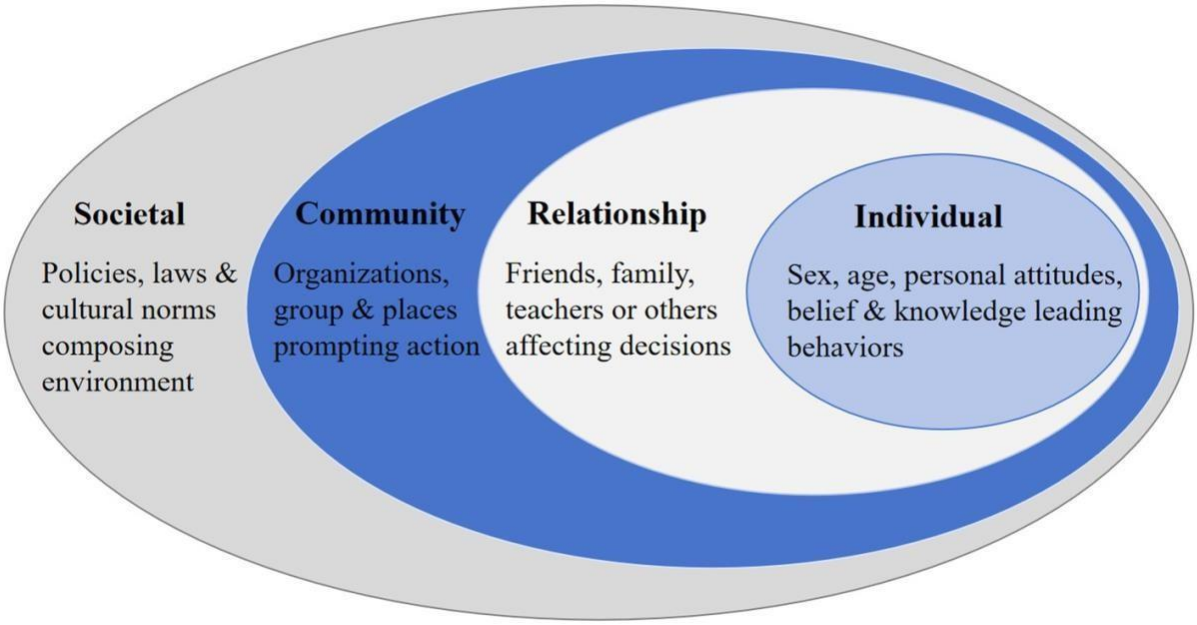


Figure 2.1
Levels of Influence on Health and Health Risks

Global and international perspectives on T2D Disparities.

Globally, Black, and ethnic minority populations are disproportionately affected by T2D, with significant similarities seen in comparable high-income nations. Compared to non-Hispanic whites, African Americans in the US have a 60% higher chance of receiving a type 2 diabetes diagnosis. They are also more likely to experience complications, including renal failure, and

amputation (CDC, 2023). Similarly, Black Canadians are diagnosed with T2D later, and have a two to three times higher rate, than white Canadians (Public Health Agency of Canada, 2022). These trends include institutional disparities in access to food, housing, work, and health care, in addition to genetic predispositions. Across the European continent, 1 in 11 people have diabetes and rates are rising across the EU. In multicultural Northern European states, similar racial inequalities in access to care and outcomes are evident (Meeks et al., 2016). Though there are some examples of countries, like Norway and Denmark, implementing targeted strategies to reduce racial care gaps, nowhere has the issue been brought under control. Wherever there are racial minority groups these always face inequalities in care access and diabetes outcomes.

The World Health Organisation (WHO) Global Diabetes Compact (2021), advocates for equitable, person-centred diabetes treatment, and promotes goals for universal access to necessary drugs and education by 2030. However, many countries, including the United Kingdom, are falling short of these ambitions. Diabetes UK (2023) indicates that despite national standards, fewer than 30% of Black, and ethnic minority patients, attend formal education programmes, such as DESMOND. The UK's pay-for-performance (P4P) plan, which was implemented in 2004, improved glycaemic control for White patients, but failed to benefit Black communities, in part because it discouraged time-intensive care, for difficult cases (Alshamsan et al., 2012; Millett et al., 2007). This global context highlights the present study's distinctiveness, and importance. While the United States and Canada, have created culturally appropriate interventions (for example, community health worker models), the United Kingdom still lacks scalable, evidence-based programs, designed exclusively for Black African citizens.

Understanding the Link Between Lifestyle and T2D

Understandably, studies have shown that unhealthy lifestyle also contributes to prevalence of T2D diabetes among Black ethnic groups in the UK. Holman et al. (2020) and Carr et al. 2021) showed that a significantly larger number of deaths during the COVID-19, were patients with pre-existing diabetes. Carr et al. (2021) further postulated that the unhealthy lifestyle imposed by the lockdown restrictions (for instance, reports of poor diet, barest minimum physical activity, increased alcohol consumption, poor sleeping habits, and mental health issues during the lockdown (Barker, 2022; Campbell, 2023; Zahry et al., 2024) may be responsible for the disproportionate covid mortality among T2D patients. Moreover, lifestyle choices such as dietary habits, alcohol consumption, physical activity, smoking and sleep quality, have been directly linked to development of diabetes, especially, T2D (Hills et al., 2018; Ahmed et al., 2023; Diabetes UK, 2024). However, other studies have shown the effectiveness of health coaching intervention in managing lifestyle and T2D. The research by Guo et al. (2020) found a strong relationship between dietary habits and T2D development and intervention. According to their study, whereas black ethnic individuals are genetically predisposed to T2D, the development of T2D at the biological level is dependent on nutritional intake. This finding showed that different food types interact with T2D genetic variants differently and 9Ifound carbohydrate and fat-rich diets (which black ethnic foods consist of) catalysing the development of T2D. However, Guo et al. (2020) noted that the precise nutritional recommendation for the prevention and intervention of T2D in respect to dietary intake is yet to be developed.

Dietary and lifestyle are also contributing factors to the prevalence of T2D among blacks in the UK. The study by Ahmed et al. (2023) on the effects of dietary and lifestyle patterns on T2D development among black minorities in the UK, showed the differences in risks to T2D and

its complications between first-generation and younger generations of black UK immigrants. The first-generation black UK residents had a higher risk of T2D diagnosis than the younger generations. Attributing the variations to the improved level of health-conscious knowledge and habits in the younger generations, the study identified dieting plans (more than two servings of fruits and vegetables daily) and exercise routines (specifically weekly walking) as a factor to the positive outcomes of the younger generations. The study further proved a positive relationship between healthy sleeping habits and reduced T2D diagnosis and complications. Also, the findings showed that properly balanced diets involving fruits, vegetables, whole grains, lean proteins, and normal physical activity minimized T2D complications. Although the majority of the older generation of black residents did not practice the identified healthy lifestyle (including alcohol consumption and smoking) and thus developed more cases of T2D complications, the findings by Ahmed et al. (2023) contradictorily showed that among the older immigrants who practiced healthy dietary and lifestyle habits, an equally high development of T2D and its complications suggesting that more research on the aspects of diet and lifestyle control in T2D management is needed. Demir et al. (2021) also warned that blood glucose control may be insufficient in preventing and managing T2D based on conflicting evidence.

From the reviewed studies, the Blacks in the UK are more prone to T2D. As outlined previously, understanding this prevalence is intricately bound up with socio-economic status (SES) and socio-ecological causes that influence individual lifestyle and dietary habits. Nonetheless, the findings do comprehensively show that T2D diabetes rates are particularly high among the black ethnic groups, and that the research is sensitive to the overlapping and socially determined nature of T2D As can be seen in the summary table below, the major studies among

this population span the levels of the social-ecological model and provide an emerging, if patchy, understanding of patterns of diagnosis and treatment among this population.

Table 2.2
Summary of Studies on the Prevalence of T2D Among Black UK Residents

Authors (year)	Research Area	Study Group	Findings
Whyte et al. (2019)	Disparities in glycaemic control, monitoring, and treatment of T2D in England: a retrospective cohort analysis	Black ethnic T2D patients in the UK	Black ethnic patients had a higher prevalence of poor glycaemic control, they were also less likely to have uninterrupted disease monitoring and follow-up, and they were equally less likely to be prescribed the newer (and more effective) SGLT2 inhibitors and GLP-1 agonists drugs.
Pham et al. (2019)	Ethnic differences in the prevalence of T2D diagnoses in the UK: cross-sectional analysis of the health improvement network primary care database	400,000 diabetes patients in London	High prevalence of T2D among South Asians and Black ethnic groups compared to White patients.
Atulashvili et al. (2020)	Socioeconomic inequalities and T2D complications: a systematic review	28 observational studies in developed countries including the United Kingdom	Patients living in low-income communities showed a higher risk of T2D complications. Several factors responsible for this relationship included inadequate outpatient services, poor access to healthcare resources, high cost of treating diabetes complications, low patient self-management, and inadequate public health policies targeting low SES communities.
Topriceanu et al. (2021)	Evaluating access to health and care services during lockdown by the	15,000 respondents from five UK	Ethnic minority patients required more hours of care compared to white residents, likely because of social vulnerability and other risk

Authors (year)	Research Area	Study Group	Findings
	COVID-19 survey in five UK national longitudinal studies	longitudinal age cohorts (between 1946 and 2000) in the UK	factors that exposed them to COVID-19.
Guo et al. (2020)	The role of nutrition in the prevention and intervention of T2D.	Black ethnic groups in the UK	Black ethnic individuals are genetically predisposed to T2D, however different food types interact with T2D genetic variants differently especially carbohydrate and fat-rich diets in most black ethnic foods which catalyse the development of T2D. However, the precise nutritional recommendations for the prevention and intervention of T2D are not known.
Ahmed et al. (2023)	Effects of dietary and lifestyle management on T2D development among ethnic minority adults living in the UK: A generational shift	Longitudinal self-reported data from about 3500 first-generation and younger generations of black UK immigrants	First-generation black UK residents had a higher risk of T2D diagnosis than the younger generations due to the improved level of health-conscious knowledge and habits in the younger generations. The study showed a positive relationship between healthy sleeping habits and reduced T2D diagnosis and complications. Interestingly, among the older immigrants who practised healthy dietary and lifestyle habits, equally high development of T2D complications was noted.

Health Coaching Educational Interventions

Globally, health coaching educational interventions are being considered as a non-conventional means for the reduction and/or elimination of symptoms of chronic diseases through self-management (Boehmer et al., 2023). This is especially so given the need of chronic

disease patients to balance various requirements of their ailments including adherence to treatment, medication, lifestyle management, and behavioural changes (Obro et al., 2021). Furthermore, studies have touted the supplementary or alternative nature of self-management interventions or coaching programmes to traditional healthcare provisions in managing chronic patients (Mold et al., 2023; Bar-Haim et al., 2023). Emerging evidence suggests that lifestyle changes through health coaching or self-management reduce the intensity of the ailment and the frequency of seeking conventional treatment (Yang et al., 2020). This is especially useful as diabetes is often characterised as a “burden” due to excessive costs and complex care, with a diabetic patient spending over two times as much on medical care as a person without the disease (Powers et al., 2020). NHS England (2023) states that the term "health coaching" describes an intervention for supported self-management to empower individuals to make more thoughtful, informed, and educated decisions regarding their health and lifestyle. They add that health coaching accords people with the information, abilities, and self-assurance they need to take an active role in their own care.

Therefore, as argued by Obro et al. (2021), self-management is a crucial concept that underpins, encouraging a healthy lifestyle, staying active, creating an action plan, and managing symptoms (Van Rhoon et al., 2020; Obro et al., 2021). This is often managed by facilitators or administrators who are typically certified health or wellness coaches. However, the literature has shown that other licensed counsellors, nutritionists, dietitians, telehealth coaches, trained clinicians, physicians, and nurses actively provide self-management coaching to chronically ill patients (Garcia-Molina et al., 2020; Obro et al., 2021). Going by the blueprint presented by Obro et al. (2021), the coaching interventions may be remote (through telecommunication means), physical, or hybrid. Nevertheless, studies have disagreed regarding the efficacy of

remote coaching since it involves digital means that might not be available, effective, or acceptable to certain patient groups (see Section 2.2.4). Within the scope of health coaching, a dominant concept is “motivational interview.” Previous studies have included motivational interviewing in coaching sessions and regarded it as an effective and evidence- based technique for achieving long-lasting behavioural changes in patients with chronic illnesses (Sherifali et al., 2019; Sieczkowska et al., 2021; Kaczmarek et al., 2022). Its use however is not without cons as Lukaschek et al. (2019) suggest that the practicality of MI along with its expected benefits depend on factors such as the coach’s level of education/expertise and the demography of the coaching participants. Hogden et al. (2012) also argue that the technique is limited by its time commitment and heavy reliance on patients’ awareness and willingness to change. This predisposes the success of health coaching adopting the MI technique to these factors.

A key feature promoted by health coaching practitioners is the patient's significant involvement and ownership over the process of adopting a healthy lifestyle, taking care of existing chronic conditions, and fending against future illnesses. This is what sets it apart from more conventional “care,” which is expert driven and the patient is framed in more passive terms (Obro et al., 2021; NHS England, 2023). While this has shown remarkable benefits in reducing the ambivalence of patients, empowering patients, and improving health outcomes, it has also been criticised for its dependence on patients’ ability to engage and the time constraints (Hogden et al., 2012). This makes then effectiveness of health coaching programmes questionable.

Health Coaching Educational Interventions for T2D

Within the scope of T2D, several interventions have been proposed and employed across populations to manage, reduce, or eliminate the symptoms of the disease and prevent further complications such as amputations, cardiovascular diseases, kidney failure, blindness, heart

disease, and stroke (NHS England, 2022; Wadi et al., 2022). From several studies reviewed, a notable feature of this literature is that the interventions are usually peculiar to each individual study and are used to test the effectiveness of health coaching as a complementary means to manage T2D. While this variability in intervention design might be thought of as a benefit due to the personalised management/self-discovery and patient-centredness of these interventions, it does make comparing outcomes directly more difficult. At the very least, a lack of standardised metrics and interventions suggests an academic field that is still maturing.

The literature does contain some instances which disprove the effectiveness of health coaching due to inconsistent results, non-inclusive study population, and short-term health improvement. Some of the most prominent studies include the DiRECT trial conducted by Lean et al. (2019) to assess T2D remission in a weight-management strategy overseen by primary care staff. The DiRECT intervention was an open-label, cluster-randomised controlled study. The experiment was carried out in the United Kingdom and comprised a sample of 149 people aged 20–65 who had T2D for less than 6 years, a BMI of 27–45 kg/m² and had not used insulin within a 2-year range (that is, between mid-year 2014, and mid-year 2016). The intervention required the withdrawal of antihypertensive and anti- diabetic medications, replacing the patient's diet, and reintroducing foods gradually over a period of two to eight weeks. The intervention also provided organised support for maintaining weight reduction. The health coaching intervention proved effective as the participants reported 5% less weight below the baseline and HbA_1c below 48 mmol/mol. According to the study, these figures were achieved while 51% were without antidiabetic medication and 27% were in remission. The effectiveness of the intervention extended beyond the administration as the study reported that over one- third of the patients who remained in remission enjoyed better health at 5-year follow-up. However, the study was limited

by its white ethnic population with the white population comprising 98% of the sample. This limits the generalisability of the findings on the effectiveness of health coaching to the Black ethnic group as diabetes presents itself differently across ethnic groups.

In a trial presented in De la Fuente Coria et al. (2019), the efficacy of a planned and personalised education curriculum was presented for T2D patients for a sample size of 236 participants; in addition, the study also included family support and educational reinforcements for treatment goals. The intervention consisted of six face-to-face sessions of 30 min and follow-ups after 12 and 24 months for 236 participants with T2D mellitus in a primary care setting. Upon completion of the intervention, the glycated haemoglobin level and systolic blood pressure decreased in the intervention group signalling the effectiveness of the health coaching intervention. In fact, the participants recorded significant improvement in symptoms including in the glycated haemoglobin target. Nevertheless, as with the DIRECT trial, the study's findings could not be extended to the Black ethnic group because it was conducted in Andalusia, Spain and not a black community.

Powers et al. (2020) present a collaborative consensus report that details the reviewed framework of Diabetes self-management education and support (DSMES), an intervention created by the Association of Diabetes Care and Education (AADE) that characterises the comprehensive blend of clinical, educational, psychosocial, and behavioural aspects of care needed for daily self-management of patients with. The intervention is an ongoing interactive toolkit that provides personalised services or resources that engage the person with diabetes, the caregiver or family, and a Certified Diabetes Care and Education Specialist (CDCES). The patient handbooks comprise eight modules, a collection of handouts, and additional resources for diabetic management. Several studies that implemented the intervention revealed the significant

reach and effectiveness of the intervention in managing or reducing T2D symptoms (Carpenter et al., 2019; Damhudi et al., 2021; Lee et al., 2022; Berthoumieux et al., 2024). Nevertheless, this is not the case in some other studies. For instance, Ernawati et al. (2021) systematically reviewed 17 studies and reported inconsistent results on the effectiveness of the intervention with HbA_1c outcomes that ranged from 0.13% to 1.6%. Research has also shown that the intervention may be limited in implementation based on several factors such as resources, cultural sensitivity, and patients' relationship with diabetes and the clinic (Ernawati et al., 2021). Lee et al. (2022) mention that the intervention is limited to varied and low-income groups despite widely acknowledged evidence of health disparities. Preechasuk et al. (2019) argued based on findings that the education programme increases the workload at hospitals and is limited by time resources and the skill gap of facilitators. These suggest that the overall effectiveness of that specific health coaching programme is not ascertained and can therefore not be extended to the current study population.

Garcia-Molina et al. (2020) reviewed 28 studies were reflecting 28 different health coaching intervention programmes. The studies looked at individualised lifestyle intervention coaching, group-based lifestyle intervention coaching, and hybrid approaches with a dominant focus on physical activities and nutrition/diet. Intervention duration ranged from 2 months to 36 months, and the sample size spanned from 45 to 1004 participants with mean age between 50 and 67 years old. The interventions proved effective with patients experiencing significant glycaemic control; the combined approach of group and individual sessions, and/or extended or longer periods were considered important for success. Nevertheless, the study highlighted the sociocultural differences in healthcare systems across countries and how these can be limitations to the intervention implementation. What this infers is that while health coaching has the

potential to be effective, its success is dependent on sociocultural and geographical differences which is a key variable in the present study.

Some interventions have also adopted the Facilitator-Location-Language-Messaging (FLLM) framework. Wadi et al. (2022) conducted study that a produced a systematic review of the effect of T2D prevention and management coaching culturally tailored to Black persons of African ancestry resident in the US. The interventions reviewed were designed and evaluated using the FLLM framework. Target group members served as facilitators; the language utilised was either native to the group or acceptable for the literacy levels of the participants; setting considerations were considered; and context-sensitive messaging was employed. The findings revealed that glycaemic management was improved overall when cultural tailoring was used. Nonetheless, the effectiveness of the programme cannot be extended to Black UK residents who are at the core of the present study because geographical factors impact the success or effectiveness of any coaching programme.

Summarily, a review of various interventions show that the effectiveness of health coaching as a self-management tool for T2D may be contextually determined by a number of interdependent factors, such as intervention format, delivery, geographical location, fit with existing services, and staff skill base There remain ongoing questions about the long-term success of interventions, the generalisability of the results, and how health coaching interventions can be effective to minority ethnic groups.

Table 2.3

Summary of T2D Studies Reviewed on Health Coaching Educational Interventions

Author(s) & Location	Study Type	Intervention	Ethnic Group	Outcome
Lean et al. (2019) UK	Randomised controlled trial	Diabetes Remission Clinical Trial (DiRECT) intervention	98% white, 2% other groups	Reduced weight and HbA_1c; over one-third of patients were still in remission 24 months after the intervention with projections of health after 5 years.
De la Fuente Coria et al. (2019) Andalusia, Spain	Randomised controlled clinical trial	Individualised education programme	Unspecified	Participants recorded significant improvement in symptoms including in the glycated haemoglobin target.
Ernawati et al. (2021) 17 countries, predominantly US	Systematic review	Diabetes self-management education and support (DSMES)	Caucasian American, African American, Native American Hispanic/Latino, European, Canadian, Australian, Middle Eastern, and Asian Populations	HbA_1c outcome ranged from 0.13% to 1.6% and the effectiveness of interventions was inconsistent.
Garcia-Molina et al. (2020) Americas, Europe, Asia,	Systematic review (randomised controlled trials)	Individualised lifestyle interventions	Unrestricted	Effective with patients experiencing significant glycaemic control.

Author(s) & Location	Study Type	Intervention	Ethnic Group	Outcome
New Zealand, Africa Wadi et al. (2022) US	Systematic review	Dietary interventions	Black of African ancestry	Glycaemic management was improved through culturally tailored intervention.

Health Coaching Educational Interventions: Digital Intervention Programmes

Beyond physical interventions, remotely delivered health coaching interventions have become popular (Shan et al., 2019; Gong et al., 2020). Some health coaching programmes for diseases, in this case, T2D, have been carried out through what is referred to as telemedicine or telehealth with the use of websites and apps, telephone conversations, video conferencing, SMS (Short Message Service), among other factors. The argument against the efficacy of remote health coaching is multifaceted. Firstly, empirical findings have raised concerns about the participants' ability to access and easily use digital means, especially in the face of advancing ICT. There is also concern regarding the time constraints as well as the quality of discussions between coach and patient. Beyond these, studies have also contended that symptom improvement in T2D patients may not be long-term; this is not to mention technical glitches that may disrupt sessions.

In a study by Athinarayanan et al. (2019), an intervention called Continuous Care Intervention (CCI) was implemented. The intervention included customize telemedicine assistance, health coaching, and direction on achieving dietary ketosis through a customised low-carb diet. To facilitate this, patients were given access to a web-based software tool as part of the intervention. This tool was utilised to give biomarker- tracking tools, internet resources, and

telemedicine communication. Patients were required to self-report their biomarkers on a regular basis, including blood sugar and body weight at a frequency that was personalised to them, with this information, the care team could provide patient instructions that were specific to each patient.

The study indicated the success of the intervention as two years after baseline, the majority of CCI participants met the requirements for diabetes reversal. Nevertheless, the absence of randomisation and variation in race was a limitation to extrapolate or generalise the study's findings to all T2D patients, including minority groups such as the Black population.

Young et al. (2020) conducted an incorporated study whose health coaching intervention was a combination of nurse health coaching and mobile health technology. The coaching programme involved a 155-randomised sample and three RNs (registered nurses) who had experience in health coaching and chronic disease management. The nurses were also certified with the Motivational Interviewing Treatment Integrity tool. Based on the ideas of Motivational Interview (MI), the intervention was designed to consist of six individual sessions conducted in a counselling approach. This involved an initial in-person meeting with the nurse coach, followed by two weekly phone sessions for three months, for a total of six sessions. After the trial in 3 months, intervention group participants experienced significant improvements in diabetes self-efficacy and a decrease in depressive symptoms. However, this was not sustained nine months after and the author proposed an evaluation of the minimum dose of coaching required to sustain progress. The research also contended that the efficacy of digital technology should be subject to further research for effective ongoing automated reinforcement hence the objective of the present study.

Table 2.4
Summary of Studies Reviewed on Digital Intervention Programmes

Author(s) and Location	Study Type	Intervention	Ethnic Group	Outcome
Athinarayanan et al. (2019) US	Non-randomised controlled trial	Continuous Care Intervention (CCI)	Mostly African Americans	Patients met the requirements for diabetes reversal.
Young et al. (2020) US	Randomised controlled trial	Motivational Interviewing+ mHealth technology	Unspecified	Patients experienced significant improvements in diabetes self-efficacy and decrease in depressive symptoms

Culturally Tailored Health Coaching Educational Interventions T2D

Since minority communities in the UK are more likely to have a higher prevalence of T2D, research has urged for more culturally specific health coaching programs, or treatments for these groups (Pham et al., 2019; Wadi et al., 2022; Ahmed et al., 2023). Beyond providing interventions in a patient's language, culturally appropriate health coaching includes an awareness of alternative value sets, eating habits, family dynamics, and lived experiences of institutional inequality built into the design of the intervention (Griffith et al., 2024). Adopting foods that are culturally familiar (plantains, okra, groundnuts, etc.), awareness of the effects of racism or migration, and adopting communication methods that foster trust, and refrain from passing judgement, are all vital elements.

A culturally specific DSMES program for Black-British people is the Healthy Eating and Active Lifestyles for Diabetes (‘HEAL-D’) program (Goff et al., 2021a). HEAL-D, which was created through participatory research with Black-British individuals, community leaders, and medical professionals, included seven sessions of supervised physical exercise, behaviour change support, and nutrition instruction utilising traditional African and Caribbean ingredients. The program's impact was restricted by difficulties, such as time limits and excessive information, even though 47% of participants were of African heritage (Goff et al., 2021b).

The intervention in the present study, on the other hand, was created especially for Black African residents in the UK, and was given one-on-one, over a 12-week period through Zoom platform. Meal planning with familiar foods, addressing the emotional, and psychological aspects of well-being, and employing motivational interviewing, in a non-judgmental, person-centred way, that respected participants' autonomy, and cultural values, regarding health and body image, were all examples of culturally sensitive techniques. The Facilitator-Location-Language-Messaging (FLLM) framework, which promotes the use of context-appropriate delivery settings, credible facilitators, and culturally relevant messaging, is in line with this strategy (Wadi et al., 2022). The aim of this study is to address the shortcomings of previous generic, or aggregated treatments, by firmly establishing the coaching, in the unique reality, of Black African individuals.

Table 2.5
Summary of Studies Reviewed on Culturally Tailored Health Coaching Educational Interventions for T2D

Author(s) and Location	Study Type	Intervention	Ethnic Group	Outcome
Marples et al. (2022) UK	Service evaluation	LED (Low Energy Diets) + total diet replacement (TDR)	Minority ethnic groups	Significant improvement in quality of life and T2D remission.
Goff et al. (2021b) UK	Mixed-methods randomised controlled feasibility trial	Healthy Eating and Active Lifestyles for Diabetes ('HEAL-D')	Black British	Delivered with acceptable fidelity but with several shortcomings.

T2D Among Black Residents in the Uk

T2D is a growing health concern globally, but its impact is disproportionately higher among Black residents in the UK. Research indicates that the prevalence of T2D in Black African and Caribbean communities is significantly higher compared to the general population, with rates estimated to be three times higher (Moor et al., 2022). This disparity can be attributed to a combination of genetic, socioeconomic, and lifestyle factors.

Genetically, individuals of African and Caribbean descent may have a predisposition to insulin resistance and higher rates of obesity, both of which are critical risk factors for T2D (Barnes et al., 2016). Socio-economic factors, including lower access to healthcare, education, and healthy food options, further exacerbate this risk (Eden, et al., 2022). Additionally, cultural dietary habits and lower levels of physical activity prevalent within these communities contribute to the increased incidence of T2D.

Understanding the specific lifestyle choices and challenges faced by Black communities is crucial for designing effective interventions. Tailored health coaching programs that consider

cultural, socio-economic, and individual factors can potentially reduce the incidence and severity of T2D in these communities (Moor et al., 2022). The Socio-Ecological Model (SEM) (as illustrated in the figure 1 previously) provides a comprehensive framework for understanding how multi-level determinants influence health behaviours and outcomes, particularly in managing chronic conditions such as T2D. Arguably, health coaching better addresses these socio-ecological dimensions than standard clinical management alone, for both prevention and ongoing care needs. A cornerstone of health coaching interventions is the ability to determine which aspect/s of a person's life are influencing their lifestyle choices and health risks. As such, health coaching is not just about providing dietary advice and meal plans but is about tuning into a patients' concerns and subjectivity. Often health coaching models aim to build resilience and help people address difficulties at several levels beyond simply managing individual risks (Ruffin, 2017). For example, difficult relationships, how to access services and navigate healthcare systems, and how to mitigate or manage the effect of difficult economic circumstances are frequent subject matter within health coaching interventions. As explained previously, these factors can disproportionately affect Black communities, and culturally relevant health coaching will need to focus on these aspects to most effectively help this group of patients.

The interpersonal dynamics, especially the coach-participant relationship, significantly impact health behaviours. Coaching establishes a trust-centred, cooperative alliance that enhances goal formulation and responsibility. Research indicates that participants consider coaching as a facilitative tool that promotes autonomy and motivation (McGloin et al., 2015; Timm et al., 2022). Comprehensive diabetes treatment can benefit from coaching because of its beneficial impacts on emotional well-being, which includes decreased anxiety and depression

(Pludwinski et al., 2016; Menon et al., 2021). In places where healthcare mistrust and communication difficulties could ordinarily restrict involvement, these interpersonal processes are especially important. As such, the SEM emphasis on the need for tackling societal norms and policy contexts in addition to individual behaviour modification for long-term health improvements can be addressed effectively and more comprehensively and this may account for some of its success as a treatment modality.

Lifestyle Health Coaching Interventions and T2D Outcomes

The review has reiterated the disproportionate increase of T2D among the Black communities in the United Kingdom compared to other ethnic communities (Goff, 2019; Pham et al., 2019; Alloh et al., 2021; Seewoodhary, 2021). In fact, the study by Wadi et al. (2022) projected that two decades from now will witness the greatest increase in T2D prevalence for the African continent. Nevertheless, certain antecedents in this population have been identified in the review and linked to this prevalence of T2D and they revolve around lifestyle. The review identified several contributing or exacerbating lifestyle factors common with the Black residents in the UK including poor dietary habits (quality and quantity), alcohol consumption, limited physical activity, smoking, stress, and poor sleep quality (Hills et al., 2018; Shrestha et al., 2019; Ahmed et al., 2023; Diabetes UK, 2024).

The papers reviewed show that higher rates of T2D are associated with increased calorie, fat, and sodium intake due to higher dietary acculturation in the Black population in the UK (Goff et al., 2015). Findings on physical activity are no different as the Black community has reported lower rates of physical activity (UK Government, 2024). What this implies is that to achieve the remission of the symptoms of T2D among the Black communities who reside in the

UK, health coaching will need to achieve significant and meaningful changes to lifestyles in the context of challenging socio- economic circumstances.

Several of the interventions reviewed showed promising outcomes in the reduction or remission of T2D symptoms and complications (Young et al., 2020; Goff et al., 2021b; Marples et al., 2022). Nevertheless, these are not without potential barriers which determine the success of the health coaching programme (see next theme).

Challenges of Health Coaching Educational Intervention

The review sections reveal various shortcomings of several health coaching interventions for T2D. These shortcomings exist either within the framework of the health coaching intervention, its implementation, or both. For instance, many of the reviewed studies lack culturally representative samples, have little follow up data, and vary in their design. Furthermore, the renowned Diabetes self-management education and support (DSMES) intervention has been criticised in several studies where the intervention was implemented. The implementation of DSMES or its other adapted forms is tailed by shortfalls in material and time resources. The major limitation in the implementation of the coaching programme is its US context which is characteristically different from the UK. This contextual difference can affect the success of the intervention because Ernawati et al. (2021) posit that the success of the coaching programme is determined by culture, patients' relationship with diabetes, and patients' relationship with the clinic. In addition, there have been reports that DSMES increases the hospital workload, and coaches for the intervention are under skilled (Preechasuk et al., 2019). The UK healthcare system already reflects a related shortcoming; therefore, the intervention may compound this issue. The intervention has also been criticised for being inaccessible to minority ethnic groups as well as low-income earners (Lee et al., 2022).

The interventions in Wadi et al. (2022) were designed for minority groups, but this was based in the USA highlighting the contextual difference. In other words, the limitation exists in both the intervention and its implementation as the geographic and sociocultural context of the minority ethnic groups are different and the health coaching education programmes may not suit the context of the UK. Overall, these shortcomings indicate the gap in examining the effectiveness of an intervention for Black type 2 diabetic patients who reside in the UK.

Gaps in the Existing Research

There are only a few studies that focus on the use of health coaching intervention programmes and lifestyle strategies as a tool to reduce or eliminate the symptoms of T2D in Black patients in the United Kingdom. This finding was based on the search I carried out across various databases. Through my search, I have also discovered past studies addressing the rise in T2D numbers beyond the UK and strategies for the prevention or management of this upward trend including coaching education interventions. Furthermore, I have noted several studies addressing coaching programmes and lifestyles of individuals with T2D within other groups within the UK. While there is growing recognition of the disproportionate burden of T2D in these communities, as well as increased interest in health coaching as a self-management tool, the existing evidence base is fragmented, contextually limited, and frequently fails to address the population's complex socio-cultural realities. Four major gaps are noted highlighted.

First, there is a notable absence of health coaching research, especially planned for or carefully assessed, among Black UK residents. Although numerous interventions have been tested in diverse ethnic groups, the majority either, exclude Black African and Caribbean participants, or report findings in aggregated categories, such as "Black and Minority Ethnic" (BAME) or "Black, Asian and Minority Ethnic" (BAME), which obscure critical differences

between subgroups (Pham et al., 2019; Ahmed et al., 2023). Even when Black populations are included, they are frequently under-represented, and conclusions are based on mostly White cohorts, as was the case in the DiRECT study, which included 98% White participants (Lean et al., 2019). The effectiveness of health coaching treatments, for Black populations, whose experiences with diabetes are influenced by unique genetic, cultural, and structural variables, is still mainly unproven, and unadopted, due to the absence of concentrated studies.

Second, most of the research that has already been done is quantitative and clinical in nature; qualitative investigations that may provide insights on the barriers, beliefs, and lived experiences, impacting participation in health coaching, are notably lacking. The psychological, cultural, and relational aspects of treatment are essential to successful coaching but are often overlooked, in favour of quantifiable results, like blood pressure management, weight loss, or HbA_1c decrease (Wadi et al., 2022; Goff et al., 2021b). Interventions run the risk of being technically competent, but culturally tone-deaf if qualitative insights, into how Black people view diabetes, understand medical advice, navigate healthcare institutions, or react to coaching dynamics are not obtained. This disparity restricts the understanding of the reasons behind, the success or failure of certain programs, and impedes the creation of genuinely patient-centred models, based on shared decision-making, trust, and cultural resonance.

Third, weight-centric outcomes are overemphasised at the detriment of more comprehensive, all-encompassing measures of health and wellbeing. Weight loss is a key, if not the only, indicator of success for many health coaching treatments, such as the DiRECT trial and LED/TDR programs (Lean et al., 2019; Marples et al., 2022). Although weight management is important, this limited focus poses the risk of pathologising body size and alienating those who have suffered weight cycling and stigma, or for whom weight is not the primary concern.

Furthermore, given the high levels of stress, socioeconomic strain, and healthcare mistrust, reported in Black communities, it ignores other important outcomes like mental health, quality of life, social connectedness, medication adherence, and empowerment, dimensions that are particularly relevant (Agarwal et al., 2023; Young et al., 2020). In addition to clinical measurements, a more balanced evaluation framework is required, one that prioritises patient-defined goals, and overall well-being.

Fourth, there is little research, about the efficacy and accessibility, of digital or remote health coaching programs, for Black UK residents. While digital platforms provide scalability and ease, their use in this context is little understood. Studies by Athinarayanan et al. (2019) and Young et al. (2020), show the potential advantages of telehealth and mHealth technologies, however they were performed in the United States, and featured diverse healthcare infrastructures, and digital literacy landscapes. In the United Kingdom, where digital exclusion is still a big concern, particularly among older persons, and low-income groups, little study has been conducted, to determine whether digital coaching is viable, acceptable, or equitable for Black communities. Concerns regarding data privacy, technology access, language barriers, and depersonalisation of treatment, are rarely addressed, creating the possibility that digital solutions could only worsen current inequality in health, rather than resolve them.

In conclusion, the current research does not provide a strong, culturally grounded, and methodologically diversified evidence foundation for health coaching in Black UK communities. The paucity of population-specific studies, the lack of qualitative depth, the overreliance on weight-based outcomes, and the ambiguity surrounding digital delivery, all contribute to a critical shortfall. These gaps not only restrict clinical and policy advice but also perpetuate a cycle of standardised approaches that fail to meet the needs of those most afflicted byT2D. This

study aims to address these gaps, by examining a culturally sensitive health coaching approach, developed especially for Black people in the United Kingdom, with a focus, on both clinical, and experiential outcomes. Notwithstanding my search, there is no known study that investigates health coaching programmes as an intervention specifically for T2D Black patients of African ancestry in the UK. This is despite the attested notion that factors defining each ethnicity are culturally and socially significantly and should be examined independently (Alam et al., 2008). This study builds on the limitations of generalisations in previous studies as well as the paucity of research that focuses on UK residents of African ancestry in extant related literature.

CHAPTER 3: Research Design and Methodology

This chapter outlines and discusses the protocol for an in-depth mixed-methods study evaluating the effectiveness of health coaching among UK Black residents. This chapter presents the research design and the rationale for choosing that design. The intervention, methodology, participants, recruitment procedure, sample, and sampling technique are also examined. Furthermore, the instrument for data collection, data collection methods, data analysis, threats to validity, ethical considerations and the limitations of the study are also explored in this chapter. The chapter ends with a summary that provides the implications and contributions to knowledge of the study.

Research Design and Rationale

For the current study, a mixed-methods research design was used, incorporating both qualitative and quantitative methods. The qualitative component involved semi-structured interviews with Black participants diagnosed with T2 in the UK. These interviews explored participants' experiences and perceptions of the health coaching educational intervention, providing rich, contextual insights that complement the numerical data. Semi-structured interviews are particularly valuable in this context as they allow for flexibility in exploring participants' perspectives while ensuring that key topics are covered systematically (Bentahar & Cameron, 2015; Queirós, Faria, & Almeida, 2017).

The quantitative component of the study is organised as a static control study, with an intervention arm where participants get a health coaching intervention and a control arm of participants on a waitlist. Data collection protocols will involve the collection of medical records to assess objective health outcomes, such as changes in weight, blood pressure, glucose numbers, sleeping hours and sense of well-being. This empirical data will be analysed to measure the

effectiveness of the intervention, providing a robust basis for evaluating the impact of health coaching on T2D management.

The rationale for employing a mixed-methods design lies in its ability to address the research questions comprehensively by leveraging the strengths of both qualitative and quantitative approaches. This design enables a more nuanced understanding of the intervention's impact by integrating the depth of qualitative insights with the generalisability of quantitative findings (Castellan, 2010). While mixed-methods research can be resource-intensive and may introduce complexity into the research process, its ability to enhance the rigour, reliability, and validity of the study's outcomes justifies its use (Atieno, 2009; Blackstone, 2012). This approach provides approaches also offer the benefit of triangulation, broadly defined as employing multiple data sources, methods, investigators, theoretical perspectives, and analytical approaches in examining a single phenomenon (Brink, 1993; Robson, 2002). The primary aim of triangulation is to enhance the internal validity of findings as results coming from different data sources can confirm or refute each other. As such, this strategy is consistent with the need to evaluate health coaching interventions in a more comprehensive manner that moves beyond simply reporting the effectiveness within a bounded temporal frame.

The Intervention

The intervention delivered in this study was a 12-week health coaching course, advertised as a Full-Body Transformation Course. This course was developed from and based on the curricula of the US Health Coach Institute (HCI) where I graduated as a Health Coach. HCI is accredited by the International Coaching Institute, the only globally recognised, independent crediting programme for coach practitioners. HCI is also recognised by the Federation of Holistic therapists and is an institute which offers programmes that provide knowledge and expertise in

psychology, behavioural change, intuitive listening, motivational interviewing, and healthy lifestyle design (HCI, 2024).

The Transformation Course is a 90-day course that focuses on the participants' meal planning, physical lifestyle, and habit reorientation using the motivational interview (MI) technique of the person-centred coaching approach. The MI technique, according to Bischof et al. (2021), is a goal-oriented, therapeutic, and person-centred style of motivating commitment to behavioural change. The motivational interview is a core element of a person-centred approach, which assumes client autonomy and self- determination. Theories of self-determination hold that when the client is offered supportive and authentic coaching where they do not feel judged or pushed, they will be better able to engage in meaningful health behaviour change (Joseph and Bryan-Jefferies, 2008). In this respect, health coaching shares elements of 'liberal paternalism,' where choice and autonomy are promoted within a broadly supportive "paternal" framework (Loignon & Boudreault, 2012). This approach was employed as it provides opportunity for the participants who understand their body better to take control over their choices, through meaningful contact and encouragement from the coach (NHS, England, Skills for Health, and Skills for Care, 2020). It provides participants with an opportunity to recognise their strengths, act, and assume responsibility for making a positive impact on their lives and the circumstances around them.

The focus on the nutritional aspect of the intervention includes guidance on foods that improve glycaemic control and blood lipids (such as increasing vegetables, fruit, nut, whole grain, and legume portions). The physical lifestyle component of the intervention features encouragement to increase physical activities through yoga and Pilates to strengthen the muscles and align oneself. The habit reorientation component includes orientation against alcohol

consumption and smoking, motivating participants to take medication appropriately and punctually, and encouraging participants to attain longer and better-quality sleep. The course was implemented in a patient group chosen from my caseload and included 12 one-on-one sessions, one per week for 12 weeks.

The intervention was provided and monitored via Zoom and consisted of 1 hour for the first session and 45 minutes for subsequent sessions. During the first session in the first week, I began with an assessment of each participant's baseline status using the assessment form (see Appendix A); this formed the inception of the educational process. The assessment metrics were based on participants' blood glucose levels, weight, sleep patterns, and blood pressure. The second session was structured to complete the initial assessment and continue with the education process. Third and fourth sessions were focused on habit reorientation to monitor habit changes and discuss these changes. These habits include eating habits, lifestyle habits, and exercise frequency. The fifth- and sixth week sessions continued with the motivational interviewing (MI) technique to encourage lifestyle and behavioural changes. Throughout these sessions the participants were motivated to provide information on weight, blood pressure, and sleep patterns, which were recorded. The blood sugar metric (HbA_1c) was recorded only at the beginning and at the completion of the course as the information was provided to participants by their doctors once in three months. The seventh- and eight-week sessions included discussing progress, cover monitoring, and discussing evidence of the patient's progress or lack thereof.

The ninth, tenth, and eleventh sessions concentrated on lifestyle coaching reviews. The twelfth session rounds off the sessions and reviews information the participants have received from their doctors regarding the status of their T2D as well as their general wellness. After this session, I took a final assessment of participants' weight, blood pressure, and sleep patterns using

a data record sheet for each participant. This sheet was filled using the reports on the metrics, which I derived during the session. I also explored the well-being levels experienced by participants at this stage.

The transformation of the body course was designed to assist the individual in seeking homeostasis of the body. Homeostasis is a self-regulating process by which biology systems maintain stability while adjusting to changing external conditions. (Billman GE, 2020). It is a hands-on experience with clients who need a structure to enable them to follow through with the sessions' learning and skill development. I decided to do a one-on-one session rather than group sessions because while group sessions are better for some purposes, they are not fit for this coaching intervention because people often find it hard to speak freely and communicate about bodily experiences and ill health when others are present. According to Schuster et al. (2023), individual interviews give participants the benefit of disclosure for sharing sensitive information regarding their experience.

Zoom, a popular video conferencing technology, was used to administer the 12- week health coaching intervention, partly to increase access to help participants balance work, caregiving, and health management. While digital delivery has reduced travel costs and reschedule constraints, which are well known challenges for employees (Young et al., 2020),

It has also fundamentally changed the nature of medical interaction. Unlike face-to-face interactions which take place in a shared physical space and can foster trust, bodily presence and environmental coherence, virtual sessions which I engaged in provided a mediated, partial window into participants' lives. This created both opportunities and limitations. For example, some participants often attended from home areas with some conflicting demands, some turned off their cameras or engaged in some multitasking during coaching sessions. Instead of imposing

rigid rules for ‘professional participation, I adapted by emphasising relational flexibility, using verbal check-ins (what are you noticing in your body this week?), active listening and compassionate pacing to maintain relationships without the need for performance focus.

In addition, the virtual format made it difficult for me to detect non -verbal signals from the whole body, environmental stressors, or spontaneous emotional fluctuations, all of which are often used in coaching. However, the virtual system gave some participants a sense of psychological safety, as they were able to divulge sensitive topics, such as emotional eating due to loss or family conflicts, they were more confident behind a screen and not communicating in person. This is consistent with the findings of Wayne and Ritvo (2014), and Pludwinski et al. (2016), who demonstrated that digital platforms could reduce perceived power imbalance and increase openness, where participants feel that they have control over their environment.

Critically, the use of Zoom represents a wider trend towards digitally mediated intimacy in healthcare, where the depth of the relationship should be developed despite physical distance.

While screen sharing allied real-time co-creation of meal plans using familiar items and quick documentation of self-reported metrics, which increased accountability, I noted that the medium naturally filtered out the sensory and spatial elements of care. Future treatments could investigate hybrid models that combine virtual access with occasional in person sessions to re-establish embodied connections while remaining flexible. In summary the transition to zoom changed how coaching is delivered, rather than what coaching can be in a setting with structural constraints. The virtual format became a culturally sensitive adaptation to the rhythms of the participants' lives, rather than an event where they could meet both physically and symbolically.

Sampling Methodology and Recruitment

The participants in my study include those who were on the waiting list of my health coaching services, diagnosed with T2D, who were between the ages of 40 and 75, and those who had a primary care doctor managing their T2D. I Included individuals who were receiving medical care on the basis that improving diabetes outcomes requires a baseline of constant medical oversight, which is ensured by including individuals who are currently receiving healthcare from a primary care physician (NICE, 2020).

The participants for the control and treatment group were made up of eight females and eight males, (4 females and four males in each group), who were Black and lived in the UK. Most of these participants were over 40 because the risk of T2D increases with age starting from 40 onwards (Massey et al., 2019). Additionally, maintaining gender parity in the study guaranteed that disparities in how men and women manage their diseases and react to therapies were captured. The sample size of 16 was appropriate for my pilot study or preliminary research, providing a manageable yet meaningful cohort to evaluate the effectiveness of the intervention. Furthermore, this structure ensures that the control group is matched closely with the intervention group, strengthening the validity of my study's findings.

Recruitment Procedure

The recruitment process for my study began by identifying eligible Black UK residents aged 40-75, diagnosed with T2D, who were already on my health coaching waiting list. These individuals were referred to me by previous clients who had experienced significant improvements in their health through my coaching intervention. I approached the referred individuals, explained the study, and they expressed their interest by providing full consent to participate. To formalise this, each participant was given a consent form (Appendix A) outlining

the study's purpose, procedures, and their right to withdraw at any point should they feel uncomfortable with the process. All participants were also under the care of a primary care doctor for their ongoing medical treatment.

Sampling and Sampling Procedures

A combination of convenience sampling and stratified sampling was employed. Convenience sampling was used to recruit patients who were already on my health coaching waitlist. This approach was practical and efficient, as these individuals had already expressed an interest in the intervention and were readily available to participate. Of course, convenience sampling has several downsides and suffers from a range of biases. Not least among these is that participants are not usually representative of general or sub-populations. That is particularly the case in this study, as being on a waitlist means the participants already see value in the intervention and have made efforts to engage with it. This means they are more likely to view the intervention positively and are already in a frame of mind for the intervention to succeed. This could be contrasted with regular populations in primary care where a random group of 16 overweight diabetic patients may or may not be interested in engaging with a health coach. However, while convenience sampling may introduce some bias, it does provide access to a group of participants who are directly relevant to the study's objectives, and their participation was crucial for evaluating the effectiveness of the health coaching intervention.

To ensure a balanced representation of gender within my sample, stratified sampling was subsequently applied. I divided the participants into two strata—male and female—and randomly selected an equal number of participants from each group, resulting in eight male and eight female participants. Stratified sampling was essential for this study because it ensured that both genders were adequately represented, allowing for a more reliable comparison of outcomes

across genders. This approach also helped mitigate potential biases that could arise if one gender were overrepresented (Acharya et al., 2013).

The sample size of 16 participants, divided equally between the intervention and control groups, was chosen to provide a manageable cohort for in-depth observation and data collection. Given the resource constraints and the qualitative nature of the study, this sample size was appropriate for exploring specific outcomes before potentially scaling up the research (Kadam & Bhalerao, 2010). This small sample size also enables a personalized approach, particularly in the detailed qualitative interviews and the tracking of participants' progress over time.

The inclusion criteria include their racial background, as they had to be Black UK residents of African descent, aged between 40 and 75, diagnosed with T2D, and currently under the care of a primary care doctor. Additionally, participants were willing to engage in the health coaching educational intervention and commit to the study's timeline.

Instrumentation

As outlined in previous sections, this study is a mixed-methods study combining a quasi-experimental trial with semi-structured interview analysis. Semi-structured interviews are a qualitative instrument that blends open-ended and specific questions, allowing for flexible, in-depth exploration of participant experiences. This approach was used over open-ended or structured interviews as it offers structured guidance while still providing room for participants to elaborate on their individual experiences and views.

Additionally, the 80/20 rule of interviewing cases was applied. This is an effective interviewing principle, adapted from the Pareto Principles of Factor Sparsity, where the interviewer listens to the interviewee speaking 80% of the time and speaks only 20% asking the interview questions (Johnson, 2015). This allowed effective observation of the body language

and expression of the participants on questions relating to their T2D. The interview was conducted via telecommunication channels, like Zoom, and the information provided was recorded manually in secure notepads to prevent the possibility of data and confidentiality breaches if stored digitally.

In preparation, a semi-structured interview schedule was developed around a set of core questions related to key aspects of the intervention (see Appendix B), including participants' initial expectations, experiences during the intervention, and perceived impacts on their diabetes management. Core questions covered topics on nutrition, sleep quality, medication adherence, lifestyle behaviours, change in health behaviours, adherence to diabetes management plans, and overall satisfaction with health coaching. Semi-structured interviews are particularly effective when exploring how health interventions are perceived and integrated into daily life, as they can capture nuanced responses that more rigid methods might overlook. For example, the responses from the participants opened other talking points related to their T2D management since the intervention aimed to motivate them to self-manage their health more effectively.

For the quantitative part of the study, the study collected weight measurements in kg, Body Mass Index (BMI), systolic and diastolic blood pressure scores, blood sugar (HbA_1c), sleep quality scores, and wellbeing scores. Participants were asked to self-report these scores from recent clinical appointments (Khan et al., 2020). While the control group's medical data were gathered only at the start and end of the intervention, the test group provided weekly updates. For blood glucose (HbA_1c) levels, participants reported results from their routine three-month check-ups with their doctors, while all other data were collected through Zoom meetings.

By comparing medical data before and after the intervention, the study can quantitatively assess the effectiveness of health coaching on participants' diabetes management. Medical

records are reliable sources of data because they are routinely collected by healthcare providers and offer an accurate representation of participants' health statuses over time (Jutel & Nettleton, 2011).

Data Analysis Methods

Data analysis refers to the systematic process of reviewing, cleaning, manipulating, and modelling data to extract relevant information, draw conclusions, and support decision-making (Pandey & Pandey, 2021; Popenoe et al., 2021). The analysis was carried out using thematic analysis, descriptive statistics, and a range of comparative analysis tests.

The quantitative data were examined, using IBM SPSS Statistics (Version 25), a popular software application, for statistical analysis in health research. Data analysis is the systematic process of reviewing, cleaning, manipulating, and modelling data to extract relevant information, draw conclusions, and facilitate decision-making (Pandey & Pandey, 2021; Popenoe et al., 2021). Thematic analysis, descriptive statistics, and several comparative analytical tests were used in the study.

The qualitative data collected from the semi-structured personal interviews with the eight test group participants were analysed using the thematic analysis approach. Thematic analysis is a method for identifying, analysing, and reporting patterns or themes within qualitative data (Braun & Clarke, 2006; Maguire & Delahunt, 2017). According to Braun and Clarke (2006), thematic analysis can be accomplished on two levels; semantic, where themes are generated explicitly from the direct words of the participants at the surface; and latent, where the underlying ideologies and assumptions behind the words are interpreted to obtain in-depth contextual understanding. This study utilised the six-phase thematic analysis method recommended by Virginia Braun and Victoria Clarke (2006, 2019) to systematically analyse

participants' perceptions of T2D self-management during the intervention. The phases included the following:

1. **Familiarisation with the data**, in which the researcher repeatedly reviewed the interview transcripts and field notes to gain an overall understanding of participants' views, experiences, and concerns.
2. **Generating initial codes**, which involved identifying and coding meaningful segments of the data that were relevant to the research objectives.
3. **Searching for themes**, where the initial codes were organised into potential themes and all relevant data associated with each theme were collated.
4. **Reviewing themes**, during which the identified themes were examined to ensure that they accurately represented both the coded data and the overall dataset and were refined where necessary.
5. **Defining and naming themes**, where the relationships between themes were clarified and the significance of each theme in relation to the research questions was established.
6. **Producing the report**, which involved synthesising the findings and interpreting how the intervention influenced participants' management of T2D.

This analytical approach was particularly useful for identifying changes in participants' behaviours and attitudes across the various phases of the intervention, consistent with the methodological guidance provided by Maguire and Delahunt (2017).

Descriptive Statistics

The quantitative data collected from the participants' medical records were analysed using descriptive statistics to summarise and describe them. This entailed using measures of central tendency (mean, median) and variability (standard deviation, range) to give a general

description of the study sample and other important health parameters among participants (Cooksey, 2020; Stewart, 2022) including blood glucose levels, BMI, and HbA_1c levels before, during and after the intervention.

Descriptive statistics played a crucial role in determining the initial health metrics of the test and control groups, as well as evaluating such metrics after intervention. The method also allowed for observing trends and patterns within the data (Cooksey, 2020; Guzik & Więckowska, 2023), which is important for identifying the overall effect of the intervention. For example, the mean change in the blood glucose level before and after the intervention was used to demonstrate how the intervention affected the glycaemic control of the targeted subjects like studies by Taylor et al. (2019) and Chiavaroli et al. (2021).

Comparative Analysis

I used comparative analysis to compare the results of the test group which was given the intervention to that of the control group that did not receive the intervention to identify changes in the test group over time (Tsapas et al., 2020; Blair-Walcott, 2023). The analysis included the use of paired sample t-tests to compare pre-and post- intervention data within each group, and independent samples t-tests to compare the outcomes between the two groups (de Winter, 2019; Mishra et al., 2019). This method was important in identifying if the observed differences were significant statistically hence determining the extent to which the changes in health outcomes are associated with the intervention and not the result of sampling errors. Overall, the research compared the test and control groups to examine the effectiveness of the intervention while comparing the magnitude of health improvement over time. Additionally, the comparative analysis was supported by the effect size calculations, which allowed for evaluating the size of

the intervention impact and thus offered a more detailed perspective on its efficiency (de Winter, 2019).

The combination of thematic analysis, descriptive statistics, and comparative analysis provided a comprehensive approach to data analysis in this study. Thematic analysis offered deep insights into the qualitative aspects of participants' experiences while, descriptive statistics and comparative analysis quantitatively assessed changes in health outcomes, supporting the evaluation of the intervention's effectiveness in managing T2D.

Threats to Validity

Validity in qualitative research is the degree of accuracy or truthfulness of research finding (LeCompte & Goetz, 1982). There are various types of validity, including internal validity, external validity, and construct validity. When conducting qualitative research, it is crucial to consider the threats to validity, which can undermine the credibility of the findings (Coleman, 2022). In this study, several threats to validity were identified and managed to ensure the reliability and credibility of the findings.

Studies have shown that the major threats to validity in qualitative research are the researcher, the behaviour of the research participants, the social context, and the method of data collection and analysis (Brink, 1993; Noble & Smith, 2015). External validity addresses the degree to which research findings can be reliably generalised to other similar groups outside the study (Brink, 1993). By its nature, the results of qualitative studies rarely seek to generalise their findings and accept that results are specific to the participant group. That is particularly the case in this study, where the stories and life histories provided are inherently unique to the participants. This is not to say that other people have similar issues and circumstances that frame

their lifestyle choices, merely that another group of 16 people would have their own unique circumstances.

Internal Validity

Internal validity refers to the degree to which research findings genuinely represent reality, rather than being influenced by extraneous variables (Brink, 1993). Confounding variables concern other factors, such as participants' pre-existing health practices, social support systems, ongoing medical treatments, or any variable not measured, which could influence the outcomes, making it difficult to attribute changes solely to the intervention (Mukherjee, 2019; Nayak & Singh, 2021). Some notable issues here relate to the fact that some of these variables change naturally irrespective of the intervention. For example, blood pressure, weight, and blood glucose levels can and do vary naturally, though tend to converge on a mean over time. As such, collecting these metrics each week allows us to see a general trend, rather than focus only on two points, which might not be representative averages. (Nayak & Singh, 2021). The addition of a control group also helps mitigate these kinds of biases.

Construct Validity

Construct validity pertains to whether the study accurately measured the concepts it intended to study (Nayak & Singh, 2021), such as the participants' health behaviours and outcomes related to T2D management. Therefore, the study employed well- established tools for measuring health outcomes like blood glucose levels, BMI, and HbA_1c. The interview questions were also designed based on existing literature to ensure they accurately captured the constructs related to T2D management (Mazhar et al., 2021). This approach helped achieve data triangulation, thereby enhancing construct validity (Hayashi et al., 2019). Furthermore, I used

neutral questioning techniques during the interviews to reduce the pressure on participants to respond in socially desirable ways (Dawadi et al., 2021).

Ethical Considerations

The World Health Organisation (WHO) in collaboration with the Health Research Authority (HRA) published key principles guiding clinical research that define ethical considerations as an intricate but critical matter of attention for researchers (Friedrich- Nel & Ramlaul, 2020). According to the WHO, good clinical research that involves human subjects' participation should consider the established ethical and scientific quality standards in designing, conducting, recording, and reporting the study (Friedrich-Nel & Ramlaul, 2020). Varkey (2021) categorises these fundamentals of ethics in (medical) research as beneficence, nonmaleficence, autonomy, and justice.

Therefore, the ethical considerations that characterise the present study accommodate these principles including respect for persons and treating them equally (Kraft et al., 2021; Varkey, 2021; Subramani & Biller-Andorno, 2022). Prior to the data collection process, an independent ethics committee examined and approved the research objectives, research instruments, and data collection procedure.

Informed consent and voluntary participation are important aspects of ethical considerations (Varkey, 2021). Research participants were required to provide informed consent before participating, considering their diversity in culture, values, and faith- based beliefs. As such, I administered an informed consent form (Appendix C) to each participant in both groups before the intervention began. This informed consent assured participants' ability to understand and decide, receive full disclosure, act voluntarily, and consent to participate in the study (Varkey, 2021). The form provided a comprehensive overview of the research, its objectives, and

the expectations from them. I also repeatedly ensured and explained that they could withdraw at any point without prejudice. Potential risks and benefits were also communicated to the participants (Nusbaum, 2017).

The study also recognised the confidentiality principle that assures participants that the information provided would be held in confidence, protected, and respected (Bos & Bos, 2020; Varkey, 2021). Throughout the study, information was stored respectfully, carefully, and anonymously to ensure confidentiality. I ensured to protect the identity of every participant by adopting codes rather than names in my records. I also strived for honesty and openness across the communication. I took into consideration the individual's choices regarding what information they choose to share, keep, and/or omit so that their autonomy is protected. This also ensured safety, which is another core principle of ethical consideration (Hardicre, 2014). Individuals who declined to participate and sign were thanked and replaced with another participant.

Limitations of the Study

Certain limitations have been identified in the present study that influence the interpretation of the findings, one major limitation of the study is the sample size used for the study. This is because the sample size is significant for either approximating or testing accuracy (Hajian-Tilaki, 2014; Andrade, 2020). Nevertheless, the sample employed eight (8) participants each in both the quantitative and qualitative study. This sample size is small and therefore my findings can only be attributed to the individual participants in the study. Furthermore, a small sample size of this number may be non-informative for policymakers in the clinical or medical area. This is because the size may offer a wide confidence interval due to the lack of statistical power.

Another limitation is that the study employed a digital format of data collection where participants were engaged through Zoom conversations. The digital approach relies on self-reported data, as participants reported the changes that I subsequently recorded. Undoubtedly, participants might desire to report positively on variables such as weight loss or reductions in blood pressure and under-report some issues related to lifestyle (e.g. smoking, alcohol consumption, or sugar intake). Self-report measures are inherently subject to recall and desirability biases, so these limitations must be taken in mind when interpreting results. Furthermore, using Zoom may not make the intervention accessible to those who lack the IT skills to operate the platform. This shortcoming is highlighted by researchers such as Young et al. (2020) who questioned the efficacy of digital technology in self-management coaching programmes. However, this was cushioned by deliberate efforts such as requesting that participants stand on a scale to record weight and check blood pressure while in the Zoom meeting.

An entirely novel issue in this study was the issue payment and how this may have impacted the study. For ethical reasons, it was decided that the health coaching would be provided free of charge, partly to reduce barriers to entry and partly to reduce the impact of financial incentives on the results. However, participants not paying for the coaching programme was also a limitation as there was less commitment to attend Zoom sessions and arrive on time. Last minute cancellations and requests to reschedule were more frequent in the study than observed in my private practice. In some ways, this issue of payment changed the dynamic from that usually observed between a paying client and a health coach and may mean these results are in variance from what might be observed in financialised arrangements. Participants also attributed their unavailability or lateness to network glitches or difficulty using the software and I

had to adopt proactive measures to reschedule meetings within the same day so as not to miss a day.

CHAPTER 4: Findings and Discussion

This chapter presents the results and a discussion of the findings based on the research objectives. In investigating the effectiveness of health coaching educational intervention in reducing the symptoms of Chronic T2D among Black residents of the United Kingdom, this study focused on evaluating the lifestyle of the Black residents and determining the effectiveness of health coaching on weight, blood pressure, blood sugar, sleep, and wellbeing of the participants. Using triangulation in research methods and data collection, as described in Chapter 3, the data obtained were analysed, presented, and discussed in this chapter. The presentation of the results and discussion are structured for each research question, where the results and findings are presented, and the discussion of findings for each research question is presented sequentially.

Presentation of Results and Findings

Following the research and data analysis methods presented in Chapter 3, the data was collected using motivational interview techniques and observation for the qualitative data and medical records of the participants for the quantitative data. The results from the interview were collected from 16 participants, eight intervention participants and eight control participants, in the ratio of four males to four females in each group. All the participants for the intervention were involved in the research for the period of 12 weeks. However, while the intervention group was engaged every week, the participants in the control group were engaged in the 1st and 12th week of the intervention (see Chapter Three, Section 3.2). The medical records were also collected for the period of 12 weeks from the participants in the intervention group and on the 1st and 12th week from the participants in the control group.

Based on the data analysed, the qualitative data were used to answer Research Question 1 while a combination of qualitative and quantitative findings addressed Research Question 2. The analysis of the data collected is presented in this section under each research question.

Results for Research Question 1

This section addresses the following research question:

What are the lifestyle choices of a group of adult Black African residents of the UK?

The interview data obtained on the first week of the intervention (baseline data) from both intervention and control groups were used in answering this research question. The interview records were thematically analysed (following the stages of thematic analysis) based on the inferences from the participants' responses. The responses from the participants were coded based on common keywords and formed into four themes that are relevant to the study based on the research question as descriptively represented in Table 4.1 below.

Table 4.1
Descriptive Representation of the Thematic Analysis

Theme	Sub-themes	Codes	Number of Participants
Diets, eating Habits, and lifestyle		Veggies/fibre	2
		No planned diet, eats anything	8
		Biscuits and sweet	5
		Carb and protein	3
		Green Smoothie	1
		Fruits	5
		Coffee	1

Theme	Sub-themes	Codes	Number of Participants
Obstacles, challenges, and struggles		Lack of discipline/ procrastination	2
		Sleeping a lot	2
		Cramps	5
		Lack of motivation to cook	1
		Lack of planning	1
		Lack of control over food and cravings	5
		Stress	15
		Lack of food preference	1
		Lack of access to food regularly	1
Health Concerns		Overweight	10
		Menopause	5
		High blood pressure	1
		Uncontrollable eating	7
		Tooth pain	1
		Irritable bowel syndrome	1
		glowing skin	2
Past interventions		Worked with a coach before	1
		Dieting and exercise	10
		Immunity Boost	1

Theme	Sub-themes	Codes	Number of Participants
		Dancing	1
		Magic Plate	1
		Three miles walk	1
		Keto	1
	Supplements	Vitamin A, B, C, D	5
		Calcium	2
		Zinc	1
		Magnesium	1
		Immunity Boost	1

The theme, diet, eating habits, and lifestyle included responses relating to dietary preferences and patterns of eating and exercise; the theme, obstacles, challenges, and struggles included responses that relate to difficulties resulting from inconsistency in dieting and exercise; health concerns included responses relating to weight management, health complications, and concerns; and past health interventions included responses relating to traditional and alternative interventions (supplements).

Diet, Eating Habits, and Lifestyle.

As indicated in Figure 4.1, 8 participants indicated that they have no plans in their diet and eat anything; five participants mentioned that they eat biscuits and sweets. Only two participants had vegetables and fibre in their diet and five ate fruits.

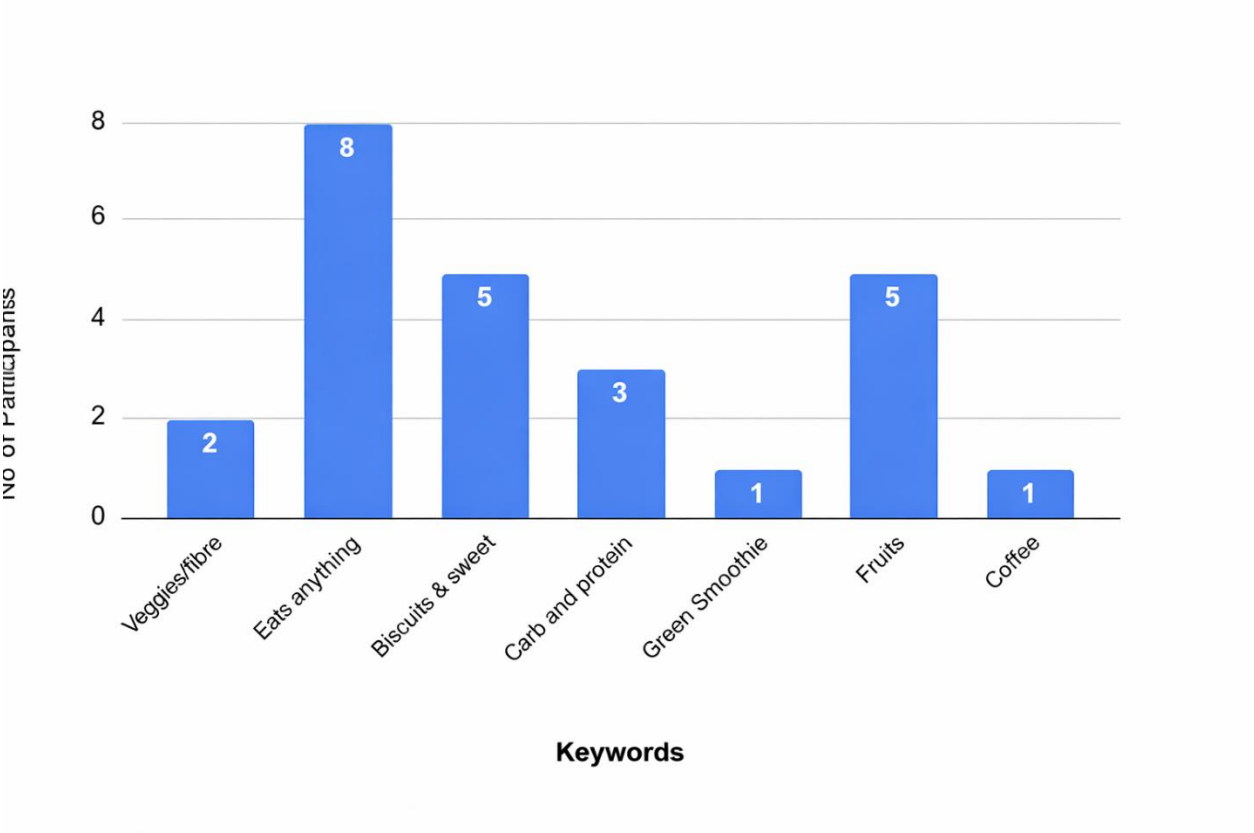


Figure 4.1
Diet, Eating Habits, and Lifestyle of Participants

The respondents' responses reflect a trend toward unhealthy diet habits and lifestyle, and it is important to note that participants hardly mentioned exercise as a lifestyle. The findings reveal that there were more respondents with poor eating habits than those with plant-based meals. Some respondents said the following:

> "My current diet is made up of fruits. I eat avocado, almonds, apples, watermelon, cucumber, beans, and a lot of greens." (PP5)
>
> "I eat a lot of biscuits, and I take so much coffee." (PP8)
>
> "Aside from food, my diet has a lot of biscuits and sweets. I crave them a lot and my husband gets them for me." (PP7)

"There are a lot of these things like lemon paneer, coconut, wheat grass, turmeric, beets, spinach, and all those." (PP1)

These findings are in line with literature such as Hills et al. (2018) and Ahmed et al. (2023) that suggest that lifestyle choices such as dietary habits, physical activity, and sleep quality, have been directly linked to the incidence of T2D. Essentially, according to Guo et al. (2020), dietary habits and T2D are closely linked especially with foods such as carbohydrate and fat-rich diets increasing the incidence and symptoms of T2D. Nevertheless, the lifestyle choices of patients with long-term diseases have been traced to socioeconomic, physical, and financial factors which determine patients' challenges and struggles in maintaining a good diet and/or lifestyle. As such, when asked about the obstacles, challenges, and struggles they feel regarding their diet/lifestyles, participants provided several elements which are discussed below.

Obstacles, Challenges, and Struggles

The dietary habits and lifestyle, according to the participants, were configured by several challenges, struggles, or obstacles they faced. Among both groups (both intervention and control group), two participants cited procrastination and lack of discipline as challenges that impeded attaining good diet habits and lifestyle. Figure 4.2 shows food cravings, cramps, and stress were mentioned the most with 5, 5, and 15 participants respectively citing them as challenges that define their current diet habits and lifestyle. Other challenges mentioned are food preference, access to food, and excess sleeping.

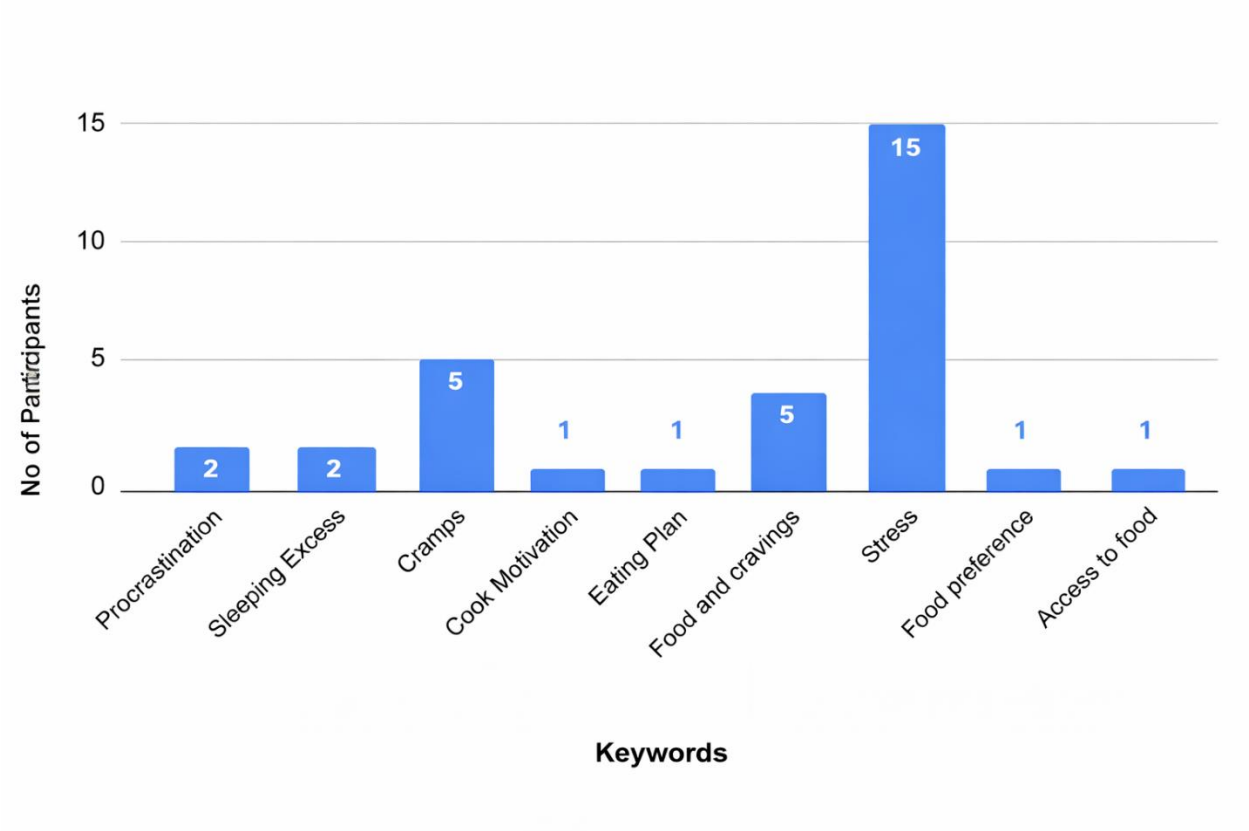


Figure 4.2
Obstacles, challenges, and struggles

These findings are echoed in the studies by Spencer Bonilla et al. (2016) and Volaco et al. (2018) who inferred that socioeconomic factors defined by lifestyle conditions such as limited access to healthy food, psychological stress, and restricted autonomy are associated with increased risk of T2D. What this implies is that addressing these challenges and obstacles will directly impact the diet habits and lifestyle of participants. These are affirmed by the responses of some participants:

> "I have a craving for food. I do not know how to control my portion. I do not have the discipline. I fill up my plate, and I do not have portion control. This

is my challenge. Do you know the magic plate idea? It is a big challenge to maintain that." (PP5)

"I don't have access to food regularly, so I make do with what I get, what is easy to get." (PP2)

"My husband is a sweet tooth too, so he always brings sweets for me. I am always craving chocolates because it is my destressing technique and he is always there to get them for me. I also lack control over my cravings, and I am always binging on biscuits." (PP7)

"I do face some challenges. For the longest of time, I do not have the motivation to follow a lifestyle change. I am trying to manage with my mom's health and all; she has been going through bone marrow cancer for nine months. These are taking a toll on me." (PP6)

When asked about the impact of this lifestyle on them, participants noted that the lifestyle and diet habits gave them concerns about their overall health. They also noted several specific concerns and complications they experienced due to the poor management of their lifestyle and the obstacles, and this formed a critical theme of the findings.

Health Concerns and Complications

During the qualitative study, the participants cited several health concerns that may result from the lifestyle and challenges in managing their health. As shown in Figure 4.3, 10 participants mentioned being overweight, seven mentioned uncontrollable eating, and five highlighted menopauses as their concern. Another recurring concern was the need for glowing skin, hair, and personality. Some participants specifically mentioned the size of their tummy and one participant mentioned irritable bowel syndrome (IBS).)

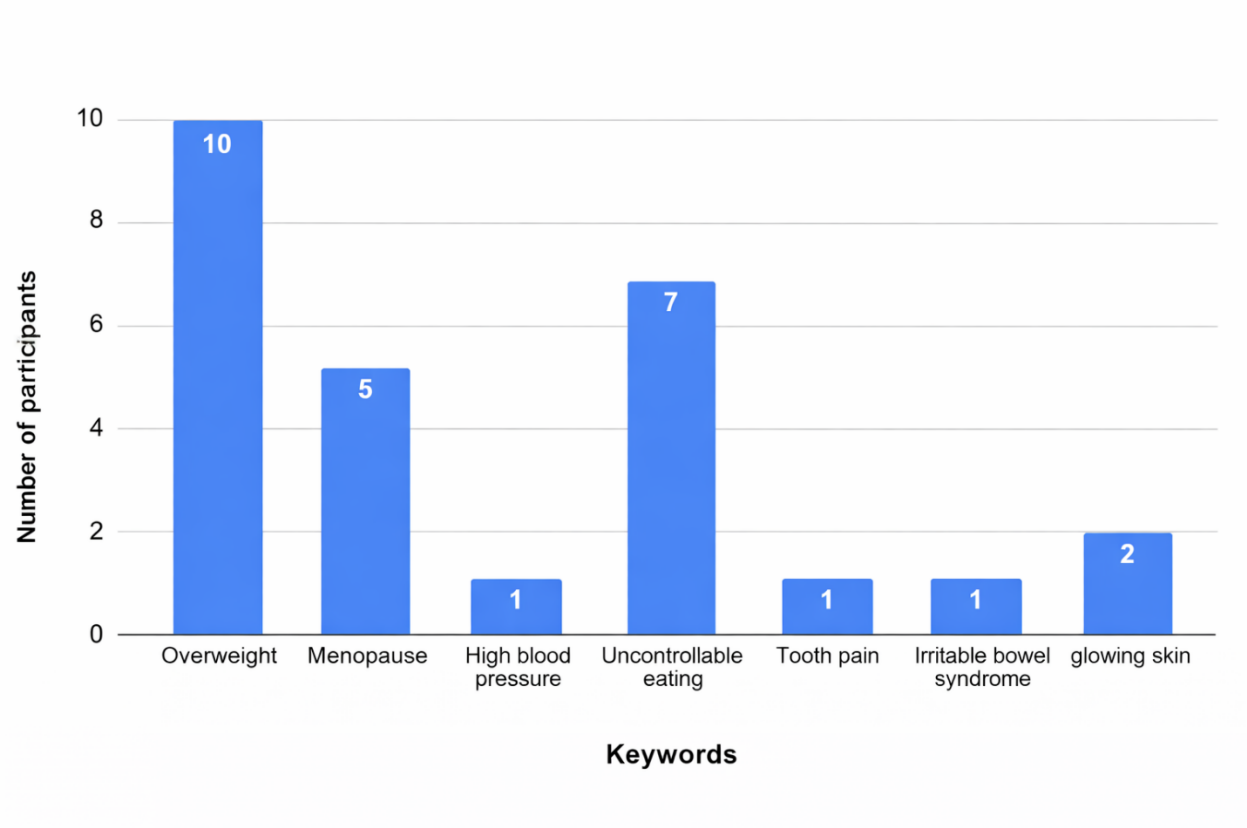


Figure 4.3
Health concerns and complications

This aligns with the findings by NHS England (2022) and Wadi et al. (2022) who submit that the incidence of T2D is associated with several complications among the black UK population. In general, the participants noted that the disease interacts with other health concerns such as menopause and high blood pressure. They added that their health concerns also extended to their physical appearance and impacted their self-confidence and relationships with others. Some of the respondents stated the following:

> 'Well, so far, my major health concern has been the menopause and the symptoms of it. I struggle with hormonal imbalance, and I try to reduce this imbalance. But another issue is with my sleep pattern and uncontrollable

eating - I am trying to manage when and how long I sleep; you know…and when and how much I eat…these two also, they are my concerns plus the menopause." (PP8)

"I have had many health concerns as well that have come with the diabetes. I have had tooth pain and other pains. I also worry about my weight gain. Another disturbing concern is IBS, irritable bowel syndrome. It can be frustrating; I mean the abdominal pain." (PP7)

"My tummy is big and this is both a health concern and a physique concern. It is hard not to judge myself. It does not make me feel good about myself." (PP5)

Participants were then asked about what they had done in the past to work on these health concerns. Several participants disclosed supplementation and non-traditional medical care with which they had engaged.

Past Interventions and Supplementation

The participants revealed several interventions they had previously used in managing the symptoms of T2D. Ten participants stated that they used dieting and exercise although they reported their inconsistency. As shown in Figure 4.4 below, only one participant mentioned previously worked with a coach and another mentioned a keto diet as a past intervention. One participant each mentioned dancing, walking, and magic plate.

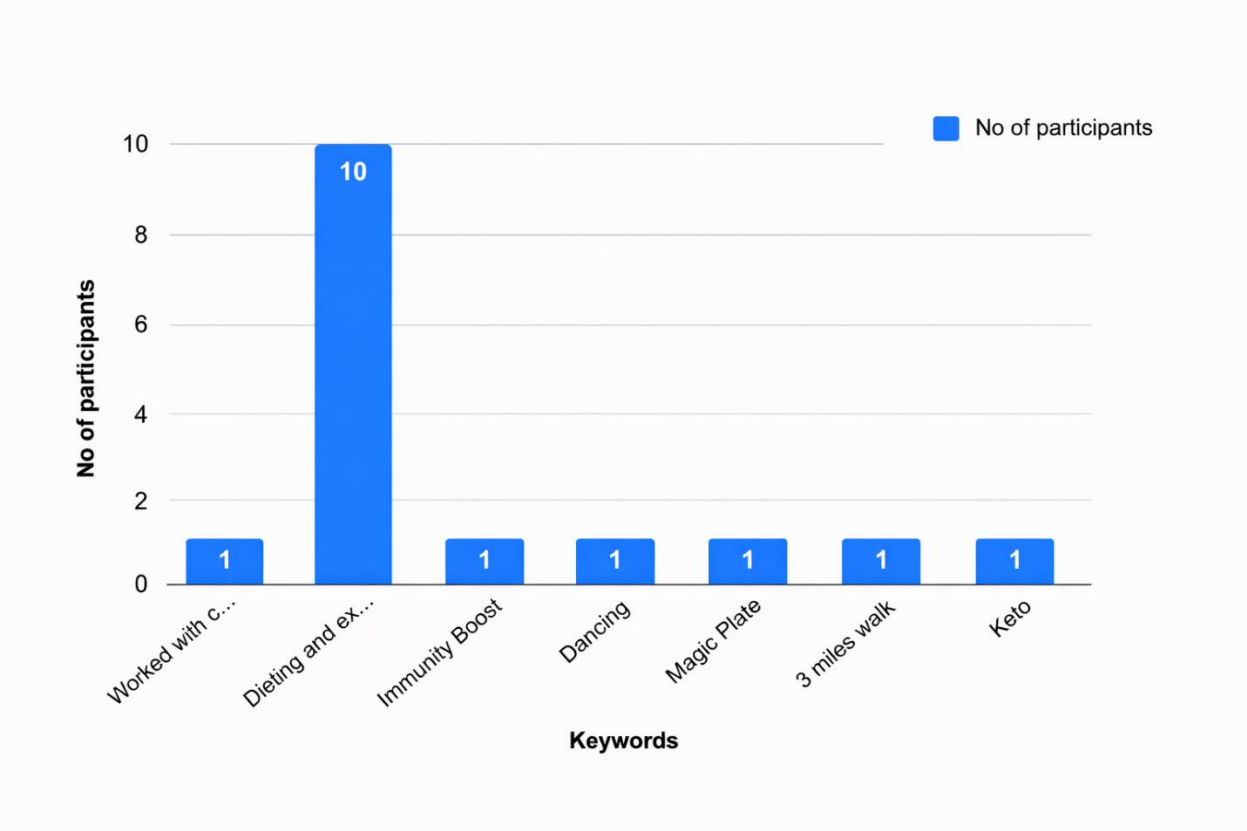


Figure 4.4
Past interventions taken by participants.

Some participants disclosed that they take supplements which have been prescribed to manage their symptoms. Some supplements common among the participants were vitamins A, B, C, and D. Calcium was also mentioned by two participants and a participant stated that he gets immunity boosts regularly (see Figure 4.5).

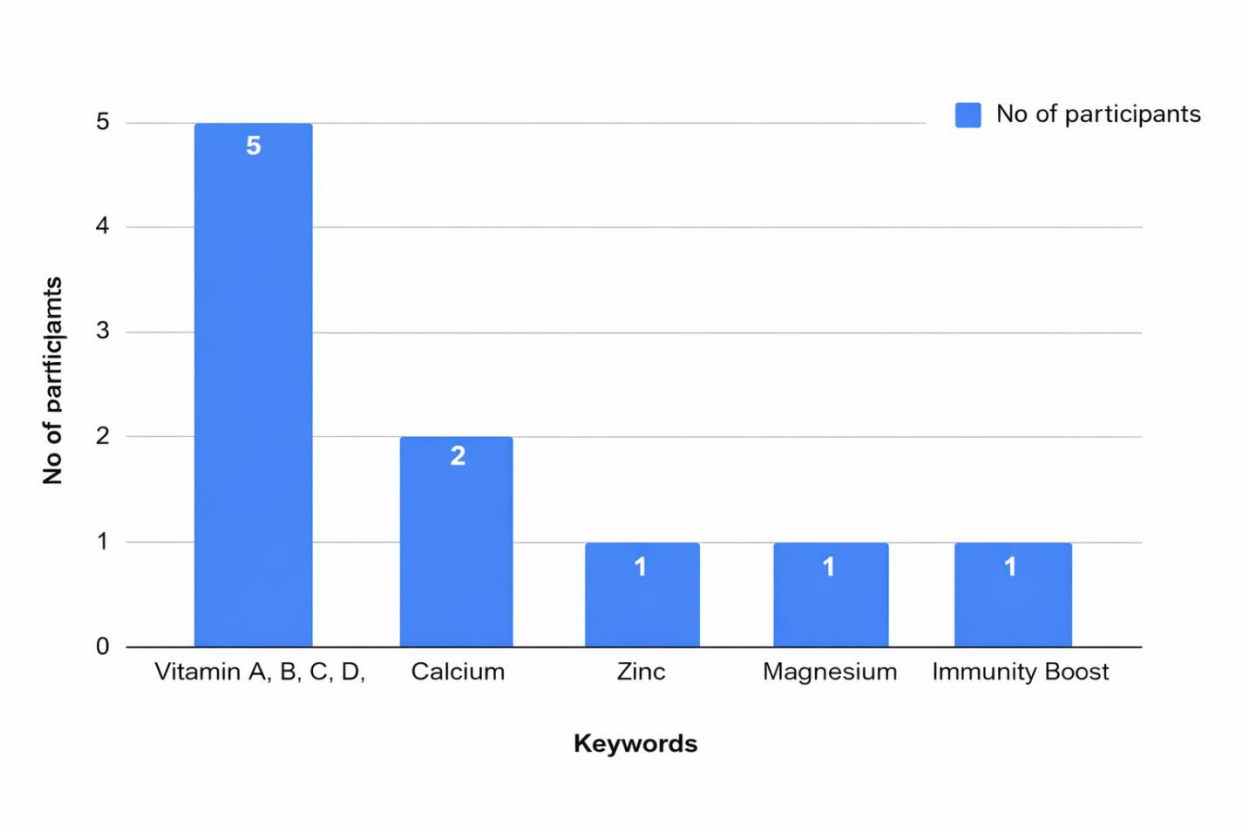


Figure 4.5
Supplements used by participants

During the qualitative study, several of the participants noted their inability to keep up with or engage consistently in their choice of past intervention and medical care alternatives due to distance and time. However, all participants noted that they required a guide or coach to manage their health, and the Zoom meeting was suitable for them. Before the administration of the total body transformation intervention, participants also provided insights on what they expected and outcomes. These are presented subsequently under Research Question 2 and juxtaposed with the quantitative findings of the study.

Result for Research Question 2

This section addresses the following research question:

How effectively does a 12-week one-on-one health coaching program work, for adult Black African residents in the UK, in terms of increasing metabolic health, which is measured, by weight, blood pressure, HbA_1c, sleep quality, and general well-being.

Following a baseline evaluation of lifestyle patterns, participants received a 12-week one-on-one health coaching intervention to enhance their metabolic health, a composite indicator, that includes, weight, blood pressure, blood glucose (*HbA_1c*), sleep duration, and subjective well-being. These measures together, indicate the body's ability, to maintain physiological balance, in the setting of T2D, and are consistent, with the clinical frameworks, utilised by the WHO, and International Diabetes Federation.

During the coaching period, it was important to understand what motivated the participants to engage in the coaching. The responses showed that aside from wanting to keep a healthy life, life satisfaction, and support systems, as well as resilience to overcome challenges motivate them to keep engaging in the coaching exercises. One of the participants responded by saying that:

> "I just want to develop healthy habits overall for a lifetime." (PP6)

Another participant mentioned being able to gain the satisfaction necessary for healthy living; and had the following comment:

> "Hmm. I want better health and eating control! I want better skin, hair, and a whole better me! I want to reduce my menopausal symptoms, like the hot flashes. I want to be able to be pampered and exercise and take saunas and travel! I want to cut off sweets too, and I want a lifetime change." (PP7)

Another participant mentioned being able to get compliments from her husband as her motivation in addition to feeling good about herself. Her comment goes as follows:

> "After this transformation, I want many things. I want to reduce from a size 74 to 66 or 68 max! I want to fit in clothes, be happy, and save money! I want to get compliments from husband, you know, he complains of my tummy and butt. I want to feel lighter and less out of breath; I do not want my thighs to jam or rub against each other anymore." (PP8)

Additionally, the participants were asked what they expected to gain from the coaching exercise, to understand their expected outcome of the educational coaching. The responses showed that the participants expected a positive outcome of the coaching session in managing their T2D. One of the respondents expected to gain more control of her lifestyle and experience growth in managing the illness. The response is as follows:

> "I hope to experience growth, growth that I can measure, growth in my discipline and lifestyle. I also want to experience gratitude instead of judging my tummy. I just want to feel awesome." (PP5)

Another respondent wanted to see results in her physical outlook and gain more discipline in managing her T2D. Her response goes thus:

> "I hope this total transformation programme will help me with tummy reduction. I also hope to fight procrastination and indiscipline with the right support, the right system, and the right accountability. I want to be able to wear new lingerie if you know what I mean." (PP6)

These responses indicate that the participants align with the perception that health coaching education intervention can be effective in managing T2D and having a better well-

being. This implies that the respondents are willing to engage in the coaching exercise during the period of the intervention. This is evident as all participants continued with the intervention for the period of 12 weeks.

Motivational Techniques Used During 12-week One-on-one Coaching Programme

As extensively explained in Chapter 3, the participants in the intervention group were interviewed every week using the motivational interview technique. This involved a person-centred approach to encouraging commitment to behavioural change. By identifying the lifestyles and habits of the participants through the baseline assessment in Week 1, each participant was motivated to commit to managing their health based on the health concerns and challenges they experience. A summary of the motivation used during the interview of the participant is presented in the table below:

Table 4.2
Summary of the Motivation Techniques

Area of Motivation	Motivational Approach
Physical Motivation	Accountability, breathing exercise, swimming, gardening, walking, dancing, paced chewing, relaxation, laughing, less phone time, declutter wardrobe, home sauna,
Nutritional Guidance	Magic plate, organic milk, fruit vegetables (almond, apple, avocado, watermelon, cucumber, green leaf, pawpaw, pear, pineapple, coconut, orange), flax seeds Food planning, more fibre, and protein, consuming magnesium daily, avoiding chocolate and sweets, honouring hunger, and fullness, chewing strategy
Psychological Motivation	Gratitude and appreciation, right support, honouring relationship, connecting with God, serenity prayer

To effectively answer this research question, the medical records on weight, blood pressure (Systolic blood pressure (SBP) and Diastolic blood pressure (DBP)), blood sugar (HbA_1c), sleeping habits, and well-being were collected from the participants every week - except blood sugar that was collected once in 3 months (2 times during the intervention). The weight was collected in the measurement of pounds (lb), the record of systolic and diastolic blood pressure was collected in mmHg, blood sugar was collected in mmol/L, sleeping habits were based on hours of sleep per night, and the well-being was collected using a scale of 0-4 (where 0 = I have no feeling of wellbeing; 1 = I rarely fell wellbeing; 2 = I sometimes feel wellbeing; 3 = I have feelings of wellbeing; 4 = I feel great always). The data that they collected from their doctors and reported to the researcher were analysed quantitatively to indicate the effectiveness of the 12-week educational coaching intervention in managing T2D among Black residents in the UK. The result and findings of the data are presented in the next section.

Descriptive Statistics of the Key Health Metrics of Black African Residents in the Intervention and Control Group

16 Black Africans, participated in the study (8 intervention, eight control), with an equal number of men, and women in each group. The age distribution was 42–73 years old (mean = 58.3, SD = 9.1). Twelve of the participants, were first-generation immigrants (75%), and four were UK-born; all had lived in the UK, for at least ten years. Regarding socioeconomic variables, six participants (62.5%) were retired, or receiving disability benefits, while ten participants (62.5%) reported full- or part-time employment. Three only had primary-level education (18.8%), seven had secondary education (43.8%), and six had post-secondary qualifications (37.5%). These characteristics are consistent, with national data that indicates

middle-aged, first-generation Black African individuals in the UK, had a greater incidence of T2D (Ntuk, 2024; Goff, 2019).

Descriptive statistics provided a summary of participants' health metrics, including weight (in pounds), systolic blood pressure (SBP), diastolic blood pressure (DBP), blood sugar (HbA_1c), sleep habits, and well-being. Measures of central tendency (mean) and variability (standard deviation) summarised the characteristics of the study population. The statistics for both the intervention and control groups are presented in Tables 4.3 and 4.4.

Table 4.3

Average Mean of Health Metrics for the Test Group from Week 1 to Week 12

Week/Health Metrics	Weight	Systolic BP	Diastolic BP	Blood Sugar	Hours of Sleep	Wellbeing
week 1	188.187	136.75	85.625	6.7875	4.975	0.750
week 2	190.375	136	86.125		4.975	0.250
week 3	189.437	133.875	86.000		4.9625	0.875
week 4	186.75	133.625	84.625		5.5375	1.250
week 5	185.125	131.125	84.625		5.225	1.875
week 6	183.625	131.625	82.875		5.8125	1.875
week 7	184.187	131.25	81.7500		5.650	1.875
week 8	180.375	129.25	81.750		5.7125	2.500
week 9	179.375	128.5	82.000		5.9625	2.625
week 10	177.500	126.5	81.375		6.1125	2.875
week 11	177.625	125.875	81.750		6.2125	2.875
week 12	176.750	125.125	80.875	5.7325	6.3500	3.000

Table 4.4
Standard Deviations of Health Metrics for the Test Group from Week 1 to Week 12

Week/Health Metrics	Weight	Systolic BP	Diastolic BP	Blood Sugar	Hours of Sleep	Wellbeing
week 1	7.463901	5.8736700	3.0207614	0.35632048	0.75922893	2.12132034
week 2	11.673382	5.0142653	3.3139316		0.53917927	0.46291004
week 3	12.152123	5.1391355	2.0701966		0.42740913	0.64086994
week 4	8.1547532	5.2627396	1.9955307		0.53167525	0.46291004
week 5	7.3375258	5.7430081	1.4078859		0.68190908	0.64086994
week 6	8.3141445	5.1806646	1.8850918		0.37201190	0.64086994
week 7	9.5839803	5.2030211	1.7525491		0.51547481	0.83452296
week 8	10.098620	5.1754916	2.0528725		0.74725688	0.75592894
week 9	8.0345237	7.0305456	1.6035674		0.49839026	0.74402380
week 10	9.0237781	6.1644140	2.0658792		0.64903774	0.99103120
week 11	8.3996173	6.1513645	2.4348657		0.61976377	0.83452296
week 12	8.3964278	6.8334785	1.8077215	0.39553760	0.75969918	0.92582009

Table 4.4 shows that participants in the intervention group experienced positive changes in several key health metrics over the 12-week period, while the control group showed little or no improvement. In the intervention group, average weight decreased from 188.19 lb at Week 1 to 176.75 lb at Week 12, whereas the control group maintained a stable weight of 201.63 lb throughout. Systolic blood pressure in the intervention group dropped from 136.75 mmHg to 125.13 mmHg, while it slightly increased in the control group. A similar trend was seen in diastolic blood pressure, which fell from 85.63 mmHg to 80.88 mmHg in the intervention group but remained unchanged in the control group. Blood sugar levels also improved in the intervention group, going from 6.79 mmol/L to 5.73 mmol/L, compared to a minimal change in

the control group. Sleep duration increased in the intervention group from 4.98 hours to 6.35 hours, while the control group only saw a small rise from 5.03 to 5.30 hours. Notably, the wellbeing score improved from 0.00 to 3.00 in the intervention group, whereas it stayed at 0.00 in the control group, showing that participants in the intervention group felt better overall by the end of the study.

Tables 4.3 and 4.4 provide more detailed information about how these changes developed over time. Table 4.3 outlines the average values of each health metric for the intervention group from Week 1 to Week 12, showing steady and consistent improvement across the weeks. Weight and both types of blood pressure showed gradual reductions, especially after Week 4, while hours of sleep and wellbeing scores increased progressively. For example, sleep improved from under 5 hours in the first few weeks to over 6 hours by Week 12, and wellbeing scores rose from below 1.00 in the early weeks to 3.00 by the end. Table 4.4 displays the standard deviations for these same health metrics, indicating how much variation existed among participants. Although there were some ups and downs, the overall consistency remained strong. For instance, the variability in blood sugar and diastolic blood pressure narrowed slightly by Week 12, which means participants were responding to the intervention in similar ways. These steady trends and stable standard deviations suggest that the intervention had a reliable and positive effect over the study period.

Paired Sample T-test Analysis on the Key Health Status within the Pre- and Post-Intervention

To determine the impact of the intervention within the intervention group, a paired sample t-test was conducted to compare the key health metrics of the participants during the pre-

and post-intervention. The mean scores of key health metrics for week 1 were compared to the mean for week 12 to check for significant statistical differences.

Table 4.5
Paired sample t-test results on the key health status of participants during the Pre- and Post-intervention

					95% Confidence Interval of the Difference	
Health Metric	pretest	post test	mean change	p value	lower	upper
weight	188.1875	176.7500	11.4375	< .05	5.24773	17.62727
systolic blood pressure	136.7500	125.1250	11.625	< .05	6.28236	16.96764
diastolic blood pressure	85.6250	80.8750	4.75	< .05	2.00437	7.49563
blood sugar	6.7875	5.7325	1.055	< .05	.76723	1.34277
sleep	4.9750	6.3500	1.375	< .05	-2.29814	-.45186
wellbeing	.0000	3.0000	3.000	< .05	-3.77400	-2.22600

Confidence level = 95%, P-value < .05

Although paired samples t-tests showed significant improvements across all aspects of metabolic health ($p < 0.05$), it is important to consider the study's small sample size (n=8) and lack of rigorous normality testing. With only eight subjects, the distribution of different scores (e.g. pre - to post -intervention weight change, HbA_1c or sleep) could not be reliably tested for normality, which is an important assumption in parametric testing. Visual assessment of the data revealed near homogeneity but in such small samples, a small bias or even a single outlier can distort the t-test findings and increase the type 1 error rate (de Winter, 2019). Outcomes such as

sleep duration and well-being are fundamentally subjective and sensitive to individual variation, increasing the potential for bias in perception. Although the direction and level of change were consistent and in line with the qualitative assessment of behavioural improvement, the statistical significance shown in Table 4.5 should not be overstated. Given data limitations the findings should be interpreted as preliminary evidence of feasibility and potential efficacy rather than clear evidence of clinical effects. Future research with larger and more diverse populations should confirm these findings using nonparametric approaches.

Independent Samples t-Test Comparing the Key Health Metrics Between Intervention and Control Groups

To determine the effectiveness of the educational health coaching intervention, an independent sample t-test was conducted to compare mean values of key health metrics between the intervention and control groups at week 12. The results are presented in Table 4.6

Table 4.6

Independent Sample T-test Results Comparing the Key Health Status between Participants in Intervention and Control Group

						95% confidence interval of the difference	
	F	sig	t	df	sig (2 tailed)	lower	upper
equal variances assumed	20.984	0.001	2.692	10	0.023	0.91455	9.70045
equal variances not assumed			2.692	5.025	0.043	0.24704	10.36796

Table 4.7
Comparison of Health Metric changes between Intervention and control groups

Health Metric	intervention group change	control group change	mean difference	p value
Weight	11.4375	0	11.4375	< .05
systolic blood pressure	11.625	0.625	11	< .05
diastolic blood pressure	4.75	0.375	4.375	< .05
blood sugar	1.055	0.1375	0.9175	< .05
sleep	1.375	0.275	1.1	< .05
wellbeing	3	0	3	< .05

Confidence level = 95%, P-value = 0.023

Subgroup analyses were used to determine if the efficacy of the intervention, varied by gender. Among the four female participants in the intervention group, average weight loss was 12.1 lbs, compared to 10.8 lbs for males. Women saw a slightly higher drop in HbA_1c (1.12 mmol/L vs. 0.99 mmol/L), but both groups experienced equivalent gains in well-being (Δ = +3.0). Although the sample size is too small for inferential gender comparisons, these patterns indicate that the intervention was equally beneficial across genders, an important result, given known gender disparities in diabetes self-management and health-seeking behaviour (Albanese et al., 2018). Future research should investigate interaction effects between gender and coaching results in larger cohorts.

The independent sample t-test results in Table 4.6 provide clear evidence of significant differences in health outcomes between participants in the intervention group and those in the control group over the 12-week study period. The intervention group mean change recorded an

average mean of 5.54 (SD = 4.82), while that of the control group showed a much lower mean value of 0.24 (SD = 0.24). This large disparity in the mean changes suggests that the intervention group had a higher mean change in health outcomes. The calculated p-value of 0.023, which is below the conventional alpha threshold of 0.05, confirms that the observed differences between the groups are statistically significant at the 95 percent confidence level. This implies that the likelihood of these improvements occurring by chance is very low, thereby supporting the effectiveness of the intervention in driving health changes among participants.

Each individual health metric reinforces this conclusion. In terms of weight, participants in the intervention group lost an average of 11.44 lb, while the control group experienced no change. This result shows a marked contrast in weight management between the two groups, with a mean difference of 11.44 lb and a statistically significant p-value of less than 0.05. Similarly, systolic blood pressure decreased by an average of 11.63 mmHg in the intervention group, compared to a negligible reduction of 0.63 mmHg in the control group, indicating a substantial improvement in cardiovascular health. Diastolic blood pressure followed the same trend, with the intervention group experiencing a reduction of 4.75 mmHg, far exceeding the minor 0.38 mmHg change seen in the control group. These differences further support the positive physiological effects of the intervention in reducing cardiovascular risk markers.

Critically, the results of Research Question 1, directly inform, and contextualise the success of the intervention in Research Question 2. The baseline data showed that participants' lifestyle issues, including emotional eating, food cravings, stress, and a lack of meal planning, were deeply rooted in their everyday lives. The coaching intervention did not impose generic dietary rules, but rather worked with participants lived experiences, such as helping them reframe "biscuit cravings", as stress responses, and co-create culturally resonant alternatives, for

example, fruit-based desserts, made with familiar ingredients, like plantain, or coconut. The alignment of baseline requirements (RQ1), and individualised assistance (RQ2), is likely to have contributed to high engagement, and improved results. In other words, the intervention's impact was relational, rather than technical, based on a sympathetic comprehension, of the participants' starting places. This synergy emphasises the importance of understanding lifestyle context, before developing behavioural treatments, particularly in culturally distinct groups.

The intervention also produced significant improvements in other health dimensions, including metabolic, behavioural, and psychological outcomes. Blood sugar levels decreased by an average of 1.06 mmol/L in the intervention group, while the control group recorded only a modest reduction of 0.14 mmol/L, highlighting better glycaemic control among those exposed to the intervention. Sleep patterns also improved notably, with intervention participants gaining an additional 1.38 hours of sleep, compared to just 0.28 hours in the control group, which points to better rest and sleep hygiene. Lastly, well-being scores improved by a full 3.00 points in the intervention group, as presented in Table 4.7, whereas no improvement was observed in the control group.

The 12-week one-on-one health coaching programme resulted in statistically significant improvements in different health measures in the intervention group in relation to the control group. Participants showed considerable reductions in weight, blood pressure, and blood sugar, as well as significant improvements in sleep duration and overall well-being. These gains, suggest that intervention had a favourable, and multifaceted impact on metabolic, cardiovascular, behavioural, and psychological health.

The findings clearly answer the thesis's major research question, indicating that a culturally aware-designed health coaching approach, may effectively help Black Africans in the

UK manage T2D. The observed improvements support the thesis, by demonstrating the short-term effectiveness of the intervention empirically, and by emphasizing the benefits of patient-centred, motivation-based coaching, in a high-risk group. This establishes the foundation for future research towards sustainable, scalable diabetes treatment strategies, which are adapted for minority ethnic communities.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

This study investigated the effectiveness of a health coaching intervention in reducing symptoms of type 2 diabetes (T2D) among Black African residents in the United Kingdom. The research sought to address an important gap in diabetes care: the limited availability of culturally relevant and evidence-based interventions specifically designed for Black African residents in the UK, a population disproportionately affected by T2D and its associated complications (Moor et al., 2022; Diabetes UK, 2019).

The study was guided by two central research questions:

1. What dietary, sleep, stress, and physical activity habits do adult Black Africans with T2D in the UK demonstrate?
2. How effective is a 12-week one-on-one health coaching programme in improving metabolic health, measured through weight, blood pressure, HbA_1c, sleep quality, and overall wellbeing?

To address these questions, the study employed a mixed-methods approach that examined both the lived experience of T2D management and the potential effectiveness of a personalised coaching model in facilitating meaningful health behaviour change.

The findings confirm existing evidence that lifestyle behaviours, including diet and physical activity, are not simply matters of individual choice. Instead, they are deeply embedded within social, cultural, and structural contexts (Hicklin, 2018; Wadi et al., 2022). Participants' dietary patterns—characterised by high carbohydrate intake, inconsistent meal planning, and emotional eating—cannot be understood in isolation. These behaviours were influenced by real-

world constraints such as time pressures, stress related to cooking, limited access to affordable healthy foods, and family dynamics that sometimes-undermined health goals.

These findings align with the work of Goff et al. (2021b), whose HEAL-D programme demonstrated that Black British adults with T2D navigate complex socio-cultural environments that shape their ability to adopt conventional dietary advice. The present study reinforces the argument that generic interventions are unlikely to be effective for this population.

In response to these realities, the 12-week one-on-one coaching intervention was designed not only to provide information but also to engage participants within their emotional, cultural, and practical contexts. The intervention was delivered through Zoom sessions and combined structured goal setting with Motivational Interviewing (MI), a counselling technique shown to improve self-efficacy and support autonomous decision-making (Izquierdo et al., 2022).

The quantitative findings were notable. Participants in the intervention group demonstrated statistically significant improvements in weight, blood pressure, blood glucose levels, sleep duration, and wellbeing. In contrast, the control group showed minimal or no meaningful change.

These results are consistent with previous research by Lean et al. (2019) and Marples et al. (2022), which reported successful outcomes from intensive behavioural interventions among minority ethnic populations. Their work suggests that when programmes are participant-centred and culturally responsive, measurable physiological improvements can occur even within relatively short time frames.

Beyond clinical indicators, however, this study also revealed the importance of relational support in chronic disease management. The coaching relationship—facilitated by a coach with

professional training and lived experience of T2D—appeared to foster trust, reduce stigma, and create a safe environment for reflection and behaviour change.

This observation aligns with the FLLM framework described by Wadi et al. (2022), which emphasises the importance of lived experience and cultural resonance in effective health interventions. Unlike impersonal digital tools or standardised group education programmes, the intervention prioritised dialogue, personal relevance, and psychological safety—elements often absent from traditional diabetes management programmes.

Nevertheless, several limitations should be acknowledged. The 12-week intervention period was sufficient to demonstrate short-term improvements but does not provide evidence regarding the long-term sustainability of these changes. As noted by Pham et al. (2019), short-term improvements in HbA_1c or body weight may not necessarily translate into long-term remission or reduced complications without continued support.

Furthermore, although medical records were used to validate clinical indicators, some lifestyle information relied on participant self-reporting. This introduces the possibility of reporting bias. In addition, the study did not employ a structured system for tracking behavioural changes over time, which limits deeper understanding of how and why specific changes occurred.

Despite these limitations, the study makes an important contribution to existing knowledge. Although health coaching has been widely examined in other contexts, few interventions have specifically focused on Black African populations living in the United Kingdom. By combining quantitative analysis with qualitative insights, the study demonstrates not only that the intervention produced measurable improvements, but also why it may have been effective.

The findings suggest that personalisation, cultural sensitivity, and the use of Motivational Interviewing techniques enabled participants to navigate ambivalence and strengthen intrinsic motivation. In doing so, the research addresses the study's central questions with both empirical evidence and contextual understanding.

Reflections on Intervention Implementation Challenges

Implementing the 12-week coaching programme revealed several practical and relational challenges. Many participants reported emotional eating linked to caregiving responsibilities, family stress, or work-related pressures. The coaching process therefore emphasised self-awareness rather than blame, encouraging mindfulness practices such as pausing before eating and reflecting on emotional triggers.

Family dynamics also influenced dietary choices. Some participants reported that family members continued to bring sweets into the household or were unwilling to modify shared meals. Participants were encouraged to involve family members in small supportive changes, such as introducing new vegetables into meals or creating a shared healthy snack space.

The use of Zoom occasionally affected engagement due to digital fatigue or competing responsibilities. In response, the coaching sessions incorporated flexible formats, including shorter check-ins and more frequent verbal engagement, which helped sustain participation while respecting participants' practical constraints.

Areas for Further Research

Future studies should investigate whether the improvements observed during the 12-week intervention can be sustained over longer periods. Longitudinal research would help determine whether lifestyle changes persist and whether continued coaching or community support contributes to long-term diabetes management outcomes.

Further qualitative research could also explore cultural beliefs surrounding food, body image, illness, and healing among Black African residents in the United Kingdom. Understanding these cultural dimensions more deeply may help design interventions that better reflect participants lived experiences and values.

Recommendations

Cultural Relevance in Diabetes Interventions

Diabetes management interventions for Black African populations in the United Kingdom need to reflect the cultural realities within which individuals live, rather than relying on standardised guidance. In this study, it became evident that participants' dietary habits, daily routines, and health decisions were shaped by cultural practices, family expectations, and lived experiences. Approaches that take these factors into account appear more likely to sustain engagement over time. This suggests that interventions should incorporate culturally familiar foods, social contexts, and everyday constraints, instead of applying general dietary recommendations that may not align with participants' circumstances.

Integration of Motivational Interviewing

The findings from this study point to the value of Motivational Interviewing as part of health coaching for individuals managing Type 2 diabetes. Participants responded positively to a person-centred approach that encouraged reflection and supported their sense of autonomy. In several instances, this approach appeared to help individuals work through ambivalence and build confidence in their ability to make changes. It may therefore be beneficial to integrate Motivational Interviewing more deliberately into diabetes care programmes, particularly where behavioural barriers such as low motivation or emotional eating are present.

Digital and Hybrid Delivery of Coaching Programmes

The use of Zoom during the 12-week intervention made it possible to maintain regular contact with participants and offered a level of flexibility that supported continued engagement. At the same time, some challenges were observed, including digital fatigue and differences in participants' access to reliable technology. These experiences suggest that while digital delivery can be effective, it may not suit all individuals equally. A hybrid model, combining online sessions with opportunities for in-person interaction where feasible, could provide a more balanced approach and improve accessibility across different groups.

Family and Community Support Structures

The findings of this study also highlight the influence of family and household environments on participants' ability to make and sustain lifestyle changes. In many cases, food choices and daily routines were shaped not only by individual preferences but by shared family practices. This sometimes-created tension between personal health goals and existing household patterns. These observations suggest that interventions may be more effective when they extend beyond the individual and consider the wider social context. Involving family members, where appropriate, and encouraging shared approaches to meal planning and lifestyle changes may support more sustainable outcomes.

Professionalisation of Health Coaching

This study further points to the importance of strengthening the role of health coaching within broader healthcare systems. The interaction between the coach and participants appeared to be a key factor in building trust and supporting behavioural change. In particular, the combination of technical knowledge and an understanding of the participants lived experiences seemed to enhance engagement. This suggests a need for clearer training standards and more

formal recognition of health coaching as part of multidisciplinary care. Embedding culturally informed coaching approaches within existing healthcare structures may contribute to reducing disparities in diabetes outcomes over time.

APPENDIX A

Participant Consent Form

Dear Participant,

You are invited to participate in a research study aimed at evaluating the effectiveness of a health coaching educational intervention in reducing the symptoms of chronic Type2 Diabetes (T2D) among Black residents of the United Kingdom (UK). This form provides detailed information about the study to help you decide whether to participate.

Research Procedures

If you agree to participate in this study, you will be asked to:

- Attend weekly Zoom sessions lasting approximately 45 minutes each, for a duration of 12 weeks.
- Complete questionnaires and surveys related to your health, diet, and exercise habits at the beginning, midpoint, and end of the study.
- Follow the recommendations provided during the Zoom sessions regarding lifestyle, diet, and exercise.
- Record your daily food intake and exercise activities in a provided diary.
- Engage in open discussions during Zoom sessions to share experiences and progress.

Voluntary Participation.

Your participation in this study is entirely voluntary. You may choose not to participate or to withdraw at any time without any penalty or loss of benefits to which you are otherwise entitled. Your decision will not affect your current or future relations with the researcher.

Potential Risks and Discomforts

While we do not anticipate any significant risks, you may experience:

- Mild discomfort discussing personal health habits.
- Temporary physical discomfort related to exercise recommendations.
- Minor changes in dietary habits.

Potential Benefits

By participating in this study, you may:

- Gain better control over your T2D through improved lifestyle, dietary, and exercise habits.
- Receive personalised guidance and support from my health coaching service.
- Contribute to valuable research that may benefit other T2D patients in the future.

Confidentiality

All information collected in this study will be kept confidential. Data will be stored securely and only accessible to the researcher. Personal identifiers will be removed from all data, and results will be presented in aggregate form without identifying individual participants.

By continuing with this research, you acknowledge that you have read and understood the information provided above, and you voluntarily agree to participate in this study.

Thank you for your participation in this important research. Your contribution is appreciated.

Yours Sincerely,

Judith Romero

APPENDIX B

Interview Schedule

The following questions will provide an understanding of how research can provide insights into reducing T2D in Black individuals in the United Kingdom. These questions are not limited as there are usually sub-questions that arise from main questions depending on how the participant answers. These questions are carried out over the 12 weeks of the intervention.

You have been diagnosed by your medical practitioner with T2D, briefly explain what this means to your overall health and well-being.

1. Are you on medication for T2D presently?
2. How many years have you been diagnosed with T2D?
3. How would you like to be involved in the management of T2D to facilitate your healing?
4. Describe your present state of well-being by explaining your daily dietary intake on a weekly basis.
5. Describe your lifestyle by explaining activities you engage in daily and on a weekly basis.
6. In your daily living, on a count of 1 to 10, 10 being the highest, where will you place your daily stress levels?
7. How will you describe your sleeping pattern?
8. Are you usually tired when you wake up, during the afternoon or in the evenings?
9. How will you describe your breakfast meals, lunch meals, and dinner meals?
10. Other than the daily medication you take for T2D, would you like to learn other nonconventional ways of bringing your stress levels down?
11. Are you happy with your present state of mind?

APPENDIX C

Data Recording Sheet

The Use of Health Coaching to Reduce the Incidence of Type 2 Diabetes Among Black Nigerians in the United Kingdom

Participant _____

(name of participant)

Table C 1
Data Recording Metrics Across Sessions (Baseline to Session 6)

Metrics	Baseline	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Weight							
Blood Pressure							
Blood Sugar							
Hrs. Sleep Last Night							

What is your feeling of Well-Being?

Well-Being							

- 0 = I have no feelings of well-being

- 1 = I rarely have feelings of well-being
- 2 = I sometimes have feelings of well-being
- 3 = I generally have feelings of well-being
- 4 = I always feel great.

Table C 2

Data Recording Metrics Across Sessions (Session 7 to Post Intervention)

Metrics	Session 7	Session 8	Session 9	Session 10	Session 11	Session 12	Post Intervention
Weight							
Blood Pressure							
Blood Sugar							
Hrs. Sleep Last Night							

What is your feeling of Well-Being?

Well- Being							

- 0 = I have no feelings of well-being
- 1 = I rarely have feelings of well-being
- 2 = I sometimes have feelings of well-being
- 3 = I generally have feelings of well-being
- 4 = I always feel great.

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PHD. DEGREE IN LIFESTYLE MEDICINE - ACADEMIC TRANSCRIPT

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Student Number:	LPU-00043
Student EIU Number:	605964
Date of Birth:	6 June 1961
Enrollment Date:	July 2022
Current Enrollment:	Ph.D.
Language:	English

Course Code	Course Title	ECTS	Completion
102 | D-LM-LMSCIENCE	Lifestyle Medicine I – The Science	10	80
103 | D-LMWORKS-101	Lifestyle Medicine WORK™ Foundations Course (A	10	82
104 | D-LMWORKS-CERT	Lifestyle Medicine WORKS™ Certification Training	30	82
201 | D-RCA-HCCCOM	Health Coaching Core Competencies	5	82
202 | D-LPHC-COMMSKILLS	Neuro Communication Skills	10	92
203 | D-RCA-SELFHEAL	The Art & Science of Self-Healing	10	99
204 | D-RCA-ROOTANALY	10-Step Root-Cause Analysis Process	10	97
205 | D-LPHC-ENERPSYCH	Energy Psychology Precision EFT I	10	100
206 | D-RCA-PRACTIRCA	RCA Practicum (3-Months)	25	100
406 | D-MA-ACADWRITE	Academic Writing (AI)	15	99
407 | D-MA-STATISTICS	10-Weeks Statistics & Qualitative Research	15	90
408 | D-MA-LITREVIEW	6-Week Literature Review	15	87
409 | D-MA-RESEAR	6-Week Research Methodologies	15	75
410 | D-MA-PROPO6	MA/Ph.D. 6-Week Proposal Course	15	79
502 | D-PHD-DISSERTA	Dissertation Research, Writing & Defending	0	69
		195	87.53

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European International University, EIU-Paris

Doctoral Thesis

Title:

The Effectiveness of a Health Coaching Educational Intervention in Reducing the Symptoms of Chronic Type 2 Diabetes Among Black Residents of the United Kingdom

Submitted by:

Judith Asadolu Romeo

605964

In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy (Ph.D.) in Lifestyle Medicine

Supervisors:

Professor Catherine Alter

Dr. Nick Deal

Date:

April 2026

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