Psychosocial Health Needs of Adults 18–64 Years Old Living with Type 2 Diabetes Mellitus in Zimbabwe: A Qualitative Intrinsic Case Study

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I declare that this thesis is my own work and has not been submitted for the award of a higher degree elsewhere.

Abstract

Introduction: The psychosocial aspects of diabetes are increasingly recognised as crucial for effective diabetes self-care. However, qualitative research on how to identify and address the psychosocial health-related needs of people with Type 2 Diabetes Mellitus in resource-limited settings, such as Zimbabwe are scarce.

Methods: An exploratory intrinsic qualitative case study design was employed. Data was collected from 16 people with T2DM through semi-structured in-depth interviews, and from three focus group discussions involving self-identified caregivers, diabetes advocates and diabetes health professionals. All interviews and focus group discussions were audio-recorded, transcribed verbatim, and analysed using Reflexive Thematic Analysis (Braun & Clarke, 2021). Themes were triangulated across participant groups to identify commonalities and differences.

Results: Several suboptimal social determinants of health factors, including the absence of a national diabetes policy and the prioritisation of vertical, donor-funded disease-specific such as human immunodeficiency virus programs were identified as significant barriers to effective diabetes self-care. The lived experience of diabetes self-care varied notably based on socio-economic status, gender, marital status and the perceived quality of social support. Common challenges reported included food insecurity, high healthcare costs, experiences of emotional distress and stigma as part of the lived experience of diabetes self-care in Zimbabwe.

Conclusion: Lived experienced of diabetes self-care may best be understood by consideration of contextual social determinants of health and multiple social identities of people with T2DM as this may results in varied psychosocial health-related needs. Consequently, in low-income setting such as Zimbabwe there is urgent need to integrate equity-focused diabetes care policies within existing health systems.

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List of Abbreviations

ADA – American Diabetes Association

CD – Communicable diseases

CDC – Centre for Disease Control and Prevention

COVID-19 – Coronavirus Disease 2019

DM –- Diabetes Mellitus

DRD – Diabetes-related distress

FGD – Focus Group Discussion

HCP – Health Care Professional

HRSNs – Health-related social needs

HICs – High Income Countries

IA – Intersectionality Approach

IDF – International Diabetes Federation

IDI – In-depth interview

IR – Integrative Review

LMIC – Low- to Middle-Income Countries

NHS – National Health Service

NCD – Noncommunicable diseases

PWD – People with Type 2 Diabetes Mellitus

RTA – Reflexive Thematic Analysis

SDH – Social Determinants Health

SDGs – Sustainable Development Goals

SEM – Socio-ecological model

SES – Socio-economic status

SSA – sub-Saharan Africa

T2DM – Type 2 Diabetes Mellitus

WHO – World Health Organisation

ZDA – Zimbabwe Diabetes Association

Definition of Terms

Depression – is a common mental disorder characterised by persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities (World Health Organisation, 2023).

Diabetes self-care practices – self- and personal-care activities and practices recommended for people living with diabetes based on seven diabetes self-care behaviours, known as the AADE7 Self-Care Behaviours (AADE7) framework, that includes monitoring blood glucose, eating a healthy diet, remaining physically active, remaining adherent to the treatment regime, taking medications on time, healthy coping, and reducing risk behaviours (American Association of Diabetes Educators (AADE), 2020).

Diabetes distress – the emotional distress that results from living with diabetes, the burden of relentless daily self-management, and the prospect of its long-term complications (Skinner et al., 2020).

Health inequalities – are avoidable and unfair differences in health outcomes between social groups (World Health Organisation, 2008).

Health-related psychosocial needs – psychological and social problems experienced, or that may be exacerbated, as a result of living with chronic conditions such as Type 2 Diabetes (Alder et al., 2008).

Intersectionality approach – this theoretical framework posits that multiple social categories (age, sex, gender, socioeconomic status) intersect at the micro-level of an individual's experience to reflect multiple interlocking systems of privilege and oppression at the macro-social-structural level (Hankivsky, 2014, p. 2).

Patient-centred care – an approach to healthcare that sees patients as equal partners in planning, development, and monitoring, to ensure the care they receive meets their physical and mental health needs (Mead et al., 2000).

Psychosocial factors – factors that encompass the link between complex environmental, social, behavioural, and emotional factors (Martikainen et al. 2002).

Self-efficacy – ‘people's beliefs in their capability to organise and execute the course of action required to deal with prospective situations’ (Bandura & Adams, 1977).

Social network – 'social structure made of individuals (or organisations) that represents "nodes”, and they are associated with one or more types of interdependencies, such as friendship, common interests, work, knowledge, prestige, and many other interests' (Masic et al., 2012).

Social support – is the exchange of resources between at least two people to increase the receiver's well-being (Shumaker & Brownell, 1984).

Type 2 Diabetes Mellitus – is the most common type of diabetes, characterised by high sugar and insulin resistance levels, where the body does not fully respond to insulin (World Health Organisation, 2022).

Chapter 1: Introduction

1.1 Introduction

Type 2 Diabetes Mellitus (T2DM) is among the most prevalent chronic diseases with significant implications for global public health, accounting for over 90% of all diabetes cases worldwide (International Diabetes Federation 2025). Currently, 24.6 million people in Africa live with diabetes, including T2DM. The number of adults with diabetes is expected to rise by 142%, reaching 60 million by 2050, representing the highest increase among the International Diabetes Federation regions.

T2DM is an endocrine disorder characterised by the body's inadequate production of insulin or its inability to effectively respond to insulin, resulting in elevated blood glucose levels. Beyond its physical manifestations, such as visual impairments, foot ulcers, skin infections, nephropathy, and neuropathy, T2DM may also affect other organs, leading to complications including sexual dysfunction, cardiovascular diseases, gastroparesis, hearing loss, and oral health issues (Ceriello & Colagiuri, 2025). Furthermore, T2DM impacts an individual's emotional, social, and behavioural well-being, collectively referred to as psychosocial health (Kelly et al., 2024, Kulzer et al., 2021).

People with T2DM residing in low- and middle-income countries seem to experience elevated levels of diabetes-related distress compared to those in high-income countries where up to 36% of people with T2DM were reported to experience significant diabetes-related distress (Perrin et al., 2017). Conversely, studies from low- and middle-income countries have reported higher prevalence rates, including 53.2% in China (Tang et al., 2023) and 33% in India (95% CI: 21%–45%) (Sinha et al., 2024).

Similarly, depression is more prevalent among people with T2DM than in the general population. In high-income countries, depression affects approximately 19% of people with T2DM (Holt, 2024), whereas in low- and middle-income countries the prevalence ranges from 31% to 45% (Hussain et al., 2018; Mendenhall et al., 2014).

The co-occurrence of T2DM with diabetes-related distress and depression is associated with poorer adherence to diabetes self-care and suboptimal glycaemic control outcomes (Devarajooh & Chinna, 2017; Gonzalez et al., 2008). Thus, there is increasing recognition of the necessity to incorporate psychosocial screening for mental health conditions such as depression and diabetes-related distress within diabetes care (Young-Hyman et al., 2016). Especially as some evidence-based interventions conducted in high-income countries have been shown to be effective in addressing clinical depression and diabetes-related distress, as well as improve diabetes self-care and outcomes for people with T2DM (Chew et al., 2017; Fisher et al., 2019; Fisher et al, 2024, Mathiesen et al., 2018; Owens-Gary et al., 2019). However, evidence of the effectiveness of these interventions within low- and middle-income countries remains largely understudied (Stephani et al., 2018).

Thus, within low- and middle-income countries, diabetes care has traditionally focused on the biomedical management of the disease, including the monitoring of blood glucose levels and haemoglobin A1c, while neglecting the psychosocial challenges faced by people with T2DM. This unintentional lack of support may lead to emotional distress, feelings of isolation, and poorer diabetes self-care outcomes (Kelly et al., 2024).

Furthermore, social determinants of health factors have been reported to influence diabetes self-care practices and outcomes (Mosley- Johnson et al., 2022). However, the impact of the intersection of suboptimal social determinants of health and T2DM comorbidity with mental health conditions on the lived experiences of diabetes self-care remains unexplored (Levy et al.,2022; Silver et al., 2025).

Therefore, this chapter presented a comprehensive overview of T2DM, emphasising its global and sub-Saharan African prevalence and its consequences. It also examined the possible impact of T2DM and its comorbidity with depression and diabetes-related distress on diabetes self-care. It explored the key concepts that underpin psychosocial health-related needs including measurement issues while highlighting possible research gaps within the study setting context Zimbabwe. Additionally, this provided the background of the

Zimbabwe healthcare system over the past four decades to highlight its uniqueness as intrinsic case study setting. Finally, the thesis structure is delineated.

1.2 Epidemiology of Diabetes Mellitus, T2DM and Its Consequences

As of 2025, diabetes mellitus remains a significant global public health concern. According to the International Diabetes Federation (2025), approximately 589 million adults aged 20–79 is living with diabetes worldwide. This figure represents approximately 1 in 9 adults globally and is projected to rise to 853 million by 2050 (International Diabetes Federation 2025).

T2DM constitutes 90% of all cases and has reached epidemic proportions worldwide (International Diabetes Federation, 2025). The exact cause of T2DM is unknown, but studies show that genetic predisposition, including positive family history, lifestyle, and environmental changes such as sedentary behaviours, poor dietary habits, obesity, and lack of physical activity significantly contribute to the risk of incident T2DM (American Diabetes Association, 2017; Faselis et al., 2020; Khalil et al., 2024, Ong et al., 2021).

The reported prevalence of T2DM in Zimbabwe ranges from 4.0–9.7% (Guariguata et al., 2013; Mutowo et al., 2015; Peer et al., 2014). However, as cautioned by Mutowo and colleagues (2015), these reported statistics may underestimate the extent of the T2DM burden due to the lack of country-specific data. Additionally, this growing burden of diabetes mellitus has also been shown to be associated with a significant rise in diabetes-related health costs.

For example, the total diabetes-related health expenditure in Zimbabwe surged from $84.6 million in 2019 to $159.7 million United States dollars in 2021, while per capita expenditure on diabetes rose from $56.00 in 2019 to $1,500.40 (USD) in 2022 (International Diabetes Federation, 2021). According to the World Health Organisation's 2016 report, diabetes mellitus caused 3.09% of all deaths in Zimbabwe, with an age-adjusted mortality rate of 57.77 per 100,000 people, which is among the highest rates reported globally, with a significant proportion of diabetes-related deaths in Zimbabwe occurring in individuals under 60 years of age (Khan, 2020). This may point to gaps in healthcare access, early diagnosis, or management of T2DM. Consequently, a T2DM diagnosis significantly impacts the physical, emotional well-being as well as poses dire socioeconomic challenges to people with T2DM, their families and to the already overburdened healthcare system (Polonsky & Henry, 2016; Seuring et al., 2015).

1.2.1 Overview of Diabetes Self-Care

Diabetes self-care centres achieve optimal glycaemic control through non-pharmacological and pharmacological interventions (Ceriello & Caligiuri, 2025). Core diabetes self-care recommendations emphasise seven self-care behaviours: healthy eating, regular physical activity, medication adherence, blood glucose monitoring, risk-reduction practices, healthy coping, and problem-solving skills (American Association of Diabetes Educators, 2025). People with T2DM are encouraged to engage in diabetes self-care to manage and prevent diabetes complications (Ausili et al., 2017; Davis et al., 2022).

Although these health behaviours are widely promoted as universal standards of diabetes self-care, their application is neither culturally nor contextually neutral. This is because the successful adoption of health behaviours such as diabetes self-care by people with T2DM has been shown to be shaped by wider social determinants of health (Levy et al.,2022). For example, in Zimbabwe, guidance on “diabetes-specific food nutrition” may be difficult to adopt because of existing diabetes-related food insecurity and economic instability which limit people with T2DM’s ability to follow dietary advice. Furthermore, regular blood glucose self-monitoring assumes sustained access to glucometers, test strips or newer self-monitoring technologies which may be financially inaccessible for many in Zimbabwe. Worryingly the international diabetes self-care guidelines appear to be aimed at people living with T2DM thus positioning diabetes outcomes as a matter of personal responsibility (Williams & Fullagar ,2019).

1.2.2 Barriers to Diabetes Self-Care

Although international standards for diabetes care exist, such as those provided by the American Diabetes Association (2024), many people with T2DM struggle with the constant requirement for adherence to diabetes self-care activities, with considerable variation in reported adherence rates among countries globally

(Khosravi Zadeh et al., 2024). For example, in the United States of America, 20–30% of people with diabetes consistently follow recommended diabetes self-care activities, particularly adherence to medication taking, due to improved healthcare accessibility and insurance coverage. However, concordance with dietary and exercise recommendations remains low (Walker et al., 2014). Similarly, most studies conducted within sub-Saharan Africa reported even lower concordance rates to diabetes self-care.

For example, the systematic review by Stephani and colleagues (2018) reported that only 15% of people with T2DM performed blood glucose testing consistently. While a study by Mogre and colleagues (2017) conducted in Ghana reported a 7% concordance with dietary recommendations among people with T2DM.Notably, Systematic reviews and studies from high-income countries (Busebaia et al., 2023; de Wit et al., 2020; Schram et al., 2021) have identified T2DM comorbidity with diabetes-related distress, depression, low self-efficacy, and suboptimal provider-patient communication as possible barriers to diabetes self-care.

However, studies from sub-Saharan Africa (Ketema et al., 2020; Mogre et al., 2019; Opoku et al., 2023) reveal structural and resource constraints within this context such as limited access to essential diabetes drugs and supplies and inadequate health infrastructure. Thus, unlike high-income countries where biomedical and psychological factors predominate diabetes care, the main obstacles in sub-Saharan Africa are contextual and sociocultural, reflecting possible interactions between poverty, lack of universal health care access, and sociocultural norms. For instance, experiences of social stigma and lack of support are also common for people with T2DM in some low-income settings.

Previous studies in Zimbabwe have investigated barriers to diabetes self-care using quantitative (Mandewo et al., 2014; Mukona et al., 2017) and qualitative methods (Hjelm & Mufunda, 2010; Kuguyo et al., 2020). These studies identified unique contextual barriers to diabetes self-care practices, such as experiences of financial instabilities, social obligations, appealing food options, illness perceptions, low education levels, economic difficulties, lack of support, complex treatment regimens, cultural and traditional beliefs, including acceptance of herbal remedies and prayers. However, none of the identified studies conducted in Zimbabwe explored the possible role of psychosocial factors as barriers and enablers to diabetes selfcare, suggesting a need for a more comprehensive approach.

Thus, it may be argued that the role of psychosocial factors, such as the co-occurrence of T2DM with mental conditions like depression or diabetes-related distress intersection with wider social determinants of health is still largely underexplored in Zimbabwe. Furthermore, successful adoption of the multidimensional diabetes self-care requires collaboration among healthcare professionals, family, peers, support groups, social networks, and the community in Zimbabwe. Hence, a better understanding of perceived psychosocial health-related needs necessitated the inclusion of multiple perspectives from all relevant stakeholders within diabetes care in Zimbabwe.

1.3 Social Determinants of Health

Social Determinants of Health are the 'circumstances in which people are born, live, function, and age' (World Health Organisation, 2008), shaped by societal decisions through social norms, economic policies, and educational programmes (Centre for Disease Control, 2024). The social determinant of health concept is multifaceted, leading to the emergence of various models that highlighted possible mechanisms pathways for health inequalities, and policy intervention points (Hill-Briggs et al., 2020; Levy et al., 2022; Lucky et al., 2017; Shokouh et al., 2017).

Research shows that social determinants of health factors such as social-economic status, employment, healthcare systems, housing, physical and social environments significantly affect health outcomes (Centre of Disease Control, 2024; Marmot, 2018). Social determinants of health factors are experienced differently due to inequalities in power and resource distribution (Yaya et al., 2020). For example, Hill-B, Riggs and colleagues (2020) explored integrating social determinants of health into diabetes self-care and recommended tailored housing stability, food security, and social support strategies as crucial for diabetes selfcare. Importantly during the COVID-19, the challenges of ongoing health inequalities were highlighted, especially as the Covid infection rates were disproportionately higher among the disadvantaged social groups, including those living with T2DM (Amsah et al., 2023; Marmot & Allen, 2020; McNeely et al., 2020; Norouzi et al., 2021; Sciberras et al., 2020).

Furthermore, as argued by Frier et al. (2022), it is pertinent that social determinant of health-related barriers at individual, clinical, community, and policy levels are identified as a way to address the rising prevalence of T2DM and mental health conditions such as depression. Worryingly, the impact of sub-optimal social determinants of health factors on diabetes outcomes is often overlooked within low-income settings. This suggests that there is urgent need to advocate for the adoption a public health approach that identifies these sub-optimal social determinants of health factors at the upstream level of influence (i.e. macroeconomic policies, social and cultural norms, income and social status, employment and working conditions) as well as downstream level of influence (i.e. social support networks, access to effective and quality healthcare services, health beliefs, coping skills, possible intersection of multiple social identities), so that they may be targeted for interventions by healthcare professionals in low-income setting such as Zimbabwe.

1.3.1 Role of Psychosocial Factors as Social Determinants of Health

Psychosocial factors, including stress, social support, self-efficacy, mental health status and coping mechanisms, play a vital role as social determinant of health because of their influence on people with T2DM's ability to achieve mental well-being and engage in health-promoting behaviours such as recommended diabetes self-care (American Psychological Association,2024). These intertwined social, mental and environmental factors may influence diabetes outcomes both directly and indirectly and are deeply intertwined with broader social and economic contexts (Hill-Briggs et al., 2020; Gonzalez et al., 2008). Consequently, people with T2DM may experience positive and negative psychosocial factors which diabetes healthcare professional may not be aware of (Stoop et al., 2018). Examples of positive psychosocial factors essential for diabetes self-care may include equitable access to diabetes and mental healthcare, financial security, affordable access to essential diabetes drugs and supplies, diabetes-specific food, gym or recreational spaces, and new diabetes technology-based tools leading to better diabetes self-care. However, access to the above factors remains mostly aspirational.

Consequently, people with T2DM globally may experience unrecognised health-related social needs as well as psychological health-related needs as part of their lived experience. While health-related social needs are integral to the lived experiences of people with T2DM, their impact may have been largely understudied (Frier et al., 2022, Verdecias et al., 2023).

Studies in HICs have identified several critical health-related social needs such as economic instability, food insecurity, and difficulties accessing healthcare as significant barriers to optimal diabetes self-care (Kreuter et al., 2021; Patel, 2020). For example, a study conducted in the United States of America by Ryan and colleagues (2023) reported that people with T2DM were experiencing at least one health-related social needs including financial challenges, food insecurity, and poor housing quality highlighting the impact these factors on diabetes self-care and diabetes outcomes.

Taken together, these study findings point to possibilities of similar and often severe experiences of health-related social needs whose impact on diabetes self-care remains understudied and unrecognised in low-income setting such as Zimbabwe. On the other hand, the lived experience of T2DM and its comorbidity with depression and diabetes-related distress, diabetes-related social stigma as well as intrapersonal relationship conflicts, may further exacerbate the perceived experiences of psychosocial health-related needs (Coombs et al., 2021, Morales-Brown et al., 2024).

1.3.2 What Are Psychosocial Health-Related Needs

Psychosocial health-related needs consist of psychological and health-related social factors that shape the lived experience of people with chronic conditions

(Tareen & Tareen, 2017; Trigwell et al., 2008). For example, Alder et al. (2008) demonstrated that people living with cancer in the United States frequently experienced unmet psychosocial health-related needs, which lead to emotional distress and socioeconomic barriers due to health insurance.

Similarly, within diabetes research, the seminal Diabetes, Attitudes, Wishes, and Needs study (Peyrot et al., 2005) and its follow-up Diabetes, Attitudes, Wishes, and Needs 2 study (Peyrot et al., 2013) emphasised the importance of addressing both medical and psychosocial health-related needs within diabetes care. These psychosocial health-related needs may include mental health conditions such as depression, diabetes-related distress, limited access to social networks or insufficient social support (Billioux et al., 2017; Ryan et al., 2023). The intersection of these factors significantly influences diabetes self-care and overall diabetes outcomes.

Social networks, including structural aspects (size) and functional components (quality and type of support) are often considered vital in diabetes self-care because support from family, friends, spouses, healthcare professionals and peers has been shown to enhance adherence through emotional, instructional, and practical assistance (Song et al., 2017). Social support has been shown to improve diabetes self-care through 'direct effect' and 'buffering' mechanisms (Stopford et al., 2013), leading to perceived increases in self-efficacy by people with T2DM (Chan et al., 2020; Qin et al., 2020). Nonetheless, the mechanisms linking self-efficacy and social support to diabetes self-care remain unclear (Miao et al., 2020).

Furthermore, people with T2DM's interactions with their social network may also be a significant source of unrecognised emotional distress. For example, unaligned expectations from social networks in terms of diet, treatment adherence, or lifestyle changes may be perceived as controlling or judgmental rather than promoting self-efficacy (Baig et al., 2015; Newton-John et al., 2017). In certain contexts, the stigma associated with T2DM can further isolate individuals with the condition (Browne et al., 2013). Additionally, cultural or gendered expectations, such as caregiving responsibilities, may intensify emotional distress, particularly for women juggling both T2DM management and household roles. These dynamics highlight the dual role of social networks in diabetes care, acting as both a resource and a potential source of stress (Young et al., 2020). The above-identified influential studies were predominantly conducted in high-income countries, leaving a significant research gap within low-income settings (Browne et al., 2017).Given the increasing burden of T2DM and its comorbidity with depression and diabetes-related distress, it is crucial to explore context-specific psychosocial barriers and enablers within low-income settings such as Zimbabwe (Ogunsakin et al., 2021).

1.3.3 Measurement of Psychological Health-Related Needs

Several validated instruments assess and screen for psychological conditions among people with T2DM. The Patient Health Questionnaire (PHQ-9) (Spitzer et al., 1999) screens for depression, while diabetes-related distress is measured using the Diabetes Distress Scale (DDS17) (Polonsky et al., 2005) and the Problem Areas in Diabetes-20 Questionnaire (PAID-20) (Welch et al., 1997). However, these instruments were not designed for assessing diabetes distress among people with T2DM only. As a result, Polonsky and colleagues (2022) developed the Type 2 Diabetes Distress Assessment System (T2-DDAS) to address this gap. However, the adoption of this new questionnaire globally remains limited.

While mental health screening tools are extensively used in high-income income countries, their consistent application in low-income settings remain problematic due to a scarcity of mental health professionals, limited resources, the absence of integrated diabetes-mental health care models as well as possible cultural variations in the perception of mental well-being (Fleer et al., 2012; Owen-Gary et al., 2018). As argued by Owolabi and colleagues (2018) there are inherent risks associated in implementing international diabetes guidelines in low-income settings without suitable cultural and contextual modification.

For example, Western cultures often emphasise psychological symptoms such as low mood, anxiety, or loss of motivation, while within African cultures this distress may be expressed somatically such as headaches or fatigue. Moreover, numerous international guidelines addressing the psychosocial aspects of diabetes (Young-Hyman et al., 2016; National Institute for Health and Care Excellence, 2022) presuppose the availability of multidisciplinary care teams, structured chronic disease management systems, and established mental health referral pathways.

Regrettably, these critical healthcare models are often absent in the low-income settings context. For example, in Zimbabwe, systemic barriers like the absence of universal healthcare funding, shortage of diabetes and mental healthcare professionals and restricted access to structured national diabetes self-management education programs may impede the effective integration of psychosocial screening within diabetes care (Nkomani et al., 2021). Addressing these limitations requires development of locally developed psychosocial interventions that incorporate input from key stakeholders such as people with T2DM, caregivers, diabetes advocates, healthcare professionals and policy makers (Amankwah-Poku et al., 2020).

1.3.4 Measurement of Health-Related Social Needs

Health-related social needs are due to non-medical factors that influence diabetes self-care; thus, addressing these needs assumes that the existence of robust referral systems to food assistance programmes and social support networks, which may not be readily available in low- to middle-income countries (Tusubira et al., 2021). Therefore, people with T2DM may frequently experience multiple, evolving health-related social needs that necessitate dynamic assessment tools within a context. For example, structured questionnaires primarily developed in the United States of America have been used to identify health-related social needs (McQueen et al., 2024; Tesfaye et al., 2024). However, best practices for screening social determinants of health factors within diabetes services in low-income settings remain largely undefined.

Consequently, this study utilised Bradshaw's taxonomy of social needs (1972), a seminal framework in public health, to delineate the lived experience of psychosocial health-related needs in Zimbabwe. Importantly Bradshaw's taxonomy facilitated differentiation between psychosocial health-related needs that were personally experienced (felt), actively sought (expressed), and revealed through inequities when compared with others (comparative) by the study participants (Browne et al., 2013; Stoop et al., 2019).

Bradshaw’s framework was particularly suitable as it transcends professionally defined normative conceptions of psychosocial health-related needs especially in the context of Zimbabwe where diabetes services have normally been delivered based on biomedical concerns over patients’ psychosocial issues. Therefore, facilitating the generation of contextually grounded insights that may inform the development of psychosocial interventions aimed at addressing modifiable barriers within diabetes self-care in Zimbabwe (Stephani et al., 2018).

1.4 Health Inequalities in Diabetes Care

Health inequalities in diabetes care are preventable and there are unjust differences in health outcomes across populations (National Health Service England & Public Health England, 2024). Within high-income countries people with lower socioeconomic status are reported to face significant barriers in diabetes self-care, resulting in poorer diabetes outcomes (Brown et al., 2004; Hill-Briggs et al., 2020).

In contrast, within low-income countries such as Zimbabwe, T2DM affects people from all socioeconomic status levels; however, those from lower SES may encounter more barriers to diabetes self-care (Mutyambizi et al., 2020). This pattern aligns with Hart's 'inverse care law' (1971), which purports that people with the greatest need often receive the least care, particularly in settings where there are no universal healthcare coverage and the healthcare exposed to market forces.

Furthermore, within low-income settings, experiences of financial instability and food insecurity making it difficult for people with T2DM to adopt lifestyle changes essential for diabetes self-care (Frier et al., 2022; Walker et al., 2021).Thus, addressing these social determinants of health factors is crucial for reducing health inequalities in diabetes outcomes (Ahmed et al., 2024; Silver et al., 2025). However, health inequalities are complex; thus, addressing them requires a multilevel approach targeted at upstream factors (e.g. macro-economic policies, health policies) and downstream factors (e.g., healthcare access, social support) (Egede et al., 2023; Hill-Briggs et al., 2022; Walker et al., 2024).

1.5. Co-occurrence of T2DM with Depression

People with T2DM experience depression at twice the rate of those without the condition, while people with depression face a 37% higher likelihood of developing T2DM (Holt et al., 2014). The connection between depression and T2DM is thought to be reciprocal, potentially involving the hypothalamic pituitary-adrenal axis, cortisol release, inflammation, and insulin resistance (Alzoubi et al., 2018; Moulton et al., 2015). Despite strong correlations, conclusive evidence for a direct causal relationship between depression and T2DM remains scarce (Tabák et al., 2014).

The prevalence of depression among people with T2DM is approximately 39% in both high- and low-income countries emphasising the global nature of this issue (Mendenhall et al., 2014; Lloyd et al 2018). In Zimbabwe, the study by Nyoni et al. (2018) reported a 37.1% prevalence of mental health problems, including depression and anxiety, among people with diabetes, but the prevalence of depression among people with T2DM was not reported separately. Depression symptoms may impede diabetes self-care by diminishing motivation and energy, negatively impacting self-care activities such as medication adherence, blood glucose monitoring, engagement in physical activity, and following diabetes-specific dietary recommendations (Hoogendoorn et al., 2019).

The relationship between depression symptoms and diabetes self-care has been extensively studied (Al-Ozairi et al., 2023; Chindankutty & Devineni, 2023; Gonzalez et al., 2016; Schmitt et al., 2021), yet research findings remain inconclusive with numerous studies suggesting a negative association between depression and diabetes self-care, the strength and direction of this relationship vary across the identified studies. For instance, Gonzalez et al. (2008) conducted a meta-analysis of 47 studies involving 17,319 patients with T2DM and reported that depression significantly correlated with poor self-care behaviours, including medication adherence, diet, exercise, and glucose testing.

Conversely, other studies (Devarajooh & Chinna 2017; Enggarwati et al. 2021) have further studied the relationship between depression and diabetes self-care and reported that correlational relationships were mediated by self-efficacy and social support. Enggarwati and colleagues (2021) explored the mediating role of social support between depressive symptoms and diabetes self-care activities among people with T2DM. Their findings suggested that enhancing social support might mitigate the negative impact of depression on diabetes self-care. On the other hand, Devarajooh and Chinna's (2017) study reported that self-efficacy mediated the relationship between depression and diabetes self-care. These two studies collectively highlight the nuanced and multifaceted relationships between depression and diabetes self-care. However, the relationship between depression and diabetes self-care is likely influenced by additional mediating factors, including perceived quality of social support, socioeconomic status, and prevailing cultural norms (Al-Dwaikat et al., 2021).

1.6. Co-occurrence of T2DM with Diabetes-related distress

Diabetes-related distress is characterised by the emotional burden associated with the complexity of diabetes self-care, fear of diabetes complications as well as intrapersonal conflicts (Skinner et al., 2020; Tareen & Tareen, 2017; Young-Hyman et al., 2016). While diabetes-related distress and depression are distinct conditions, they may co-occur (Kelly et al., 2025; Snoek et al., 2015). Diabetes-related distress is associated with the burdens associated with diabetes self-care, whereas depression is a broader mood disorder.

Global studies reveal that around 18% to 45% of people with T2DM experience moderate to high levels of diabetes-related distress (Perrin et al., 2017; Stuart et al., 2015). However, recent systematic review evidence indicates that these rates are even higher in low- to middle-income countries, where limited healthcare access and insufficient social support may intensify emotional distress (Nguyen et al., 2020). For example, in sub-Saharan Africa, the prevalence of diabetes-related distress was reported to range from 30.6% to 53.6% (Adugnew et al., 2023; Berhe, 2023; Kretchy et al., 2020). While educational interventions as part of the Diabetes Self-Management Education and Support programmes may mitigate diabetes-related distress (YoungHyman et al., 2016) research on the co-occurrence of T2DM with diabetes-related distress and depression in Zimbabwe, remains limited, potentially leading to a knowledge gap (Stephani et al., 2018).

1.7 Zimbabwe Geography, Demography, and Socio-Cultural Context

This section describes the bounded context of the intrinsic case study Zimbabwe to highlight its uniqueness and typicality, which underpins the lived experience of diabetes self-care and perceived psychosocial health-related needs. The Republic of Zimbabwe is a landlocked country in Southern Africa. It achieved independence from the British in 1980 after decades of civil war. It is divided into eight administrative provinces and two major cities: Harare and Bulawayo. An estimated 15,178,957 people live in Zimbabwe, and the majority about 68% reside in rural areas, with 32% in urban centres and an estimated three million living outside country (Zimbabwe National Statistics Agency, 2023).

Figure 1. Map of Zimbabwe

Source: https://www.worldatlas.com/maps/zimbabwe; accessed 19 January 2025.

1.7.1 Zimbabwe's Socio-Cultural Context

Zimbabwe is a multicultural country comprising the following cultural groups:

Shona, Ndebele, Venda, Tonga, Kalanga, Ndau, Shangani, and individuals of European and Asian descent residing mostly in urban areas (Zimstat., 2023). Similarly to other African countries, the Zimbabwean society is organised along patriarchal lines, characterised by male dominance across social, economic and political spheres (WHO, 2019). This patriarchal system influences health seeking behaviours and healthcare access. Men often serve as household decision-makers, which limits women's independence, including their ability to seek timely care for chronic illnesses like T2DM.

Unfortunately, within patriarchal societies such as in Zimbabwe, some women with T2DM may face financial challenges when economically dependent on male family members. They must also contend with culturally ingrained gender norms that define their roles, adversely affecting their capacity to maintain diabetes self-care (Maposa, 2024). Thus, these social structures and expectations may contribute to gender inequalities in diabetes healthcare access and diabetes outcomes (Moyo, 2019).

Christianity is the predominant religion in Zimbabwe with other religions including Isam, Judaism and African Ancestral Tradition are also practised and about 8.5% of population reporting no religious affiliation (Mapingure et al., 2021). While Christianity is the dominant religion, many Zimbabweans incorporate traditional beliefs and practices into their faith, leading to a syncretic religious environment (United States Department, 2022) as well as culturally constructed health beliefs and illness perceptions which may underpin decisions related to diabetes self-care (Hjelm & Mufunda, 2010). Consequently, some people with T2DM may interpret their diagnosis as divine punishment, a test of faith, or witchcraft and may refuse Western medical recommendations in favour of coping mechanisms such as prayer, holy water or herbal remedies (Molla et al., 2025).

1.7.2 Zimbabwe Healthcare System.

Zimbabwe's healthcare system comprises government-run public facilities, nonprofit organisations, church-affiliated healthcare providers, company-operated clinics (e.g. mining sector), for-profit clinics, and traditional medicine practitioners (Ministry of Health and Child Welfare, Zimbabwe 2019). The public health system is structured into four tiers including primary, secondary, tertiary and quaternary care. People with T2DM are normally expected to be diagnosed and receive diabetes care at the primary level, with referrals to higher levels made when clinically necessary as described in Table 1 below.

Table 1.The Four Levels of Healthcare System in Zimbabwe

Level of Care	Type of Available Care
Quaternary	Central hospitals (Harare, Chitungwiza, Bulawayo); referral centres for complex problems and specialist care.
Tertiary	Provincial hospitals offering specialities (e.g. surgery, gynaecology and obstetrics, general medicine).
Secondary	District hospitals serving 10-12 clinics average catchment area population.
Primary	Rural health centres and clinics covered by community health workers and primary care nurses.

Source: Ministry of Health and Child Welfare, Zimbabwe (2019).

However, Zimbabwe's healthcare including diabetes services have been fragmented because of seismic socio-economic and political challenges since the 1980s. People with T2DM may perceive primary healthcare facilities as inadequately resourced due to persistent issues such as the lack of essential diabetes medicines and supplies, poor healthcare infrastructure, and healthcare staff shortages further limiting the ability of Zimbabwe's primary healthcare level to implement the Package of Essential Noncommunicable Disease Interventions for Primary Health Care interventions (World Health Organisation, 2020). Some people with T2DM may be forced to bypass the primary care system and seek health at higher level government hospitals (Godman et al.,2020). However, these higher-level health care facilities also face systematic barriers. Consequently, some people with T2DM find alternative diabetes from private, faith based as well as traditional healers (Kuguyo et al.,2020, Shamu et al.,2010).

1.7.3 Zimbabwe Health Policy

Since gaining independence in 1980, Zimbabwe's macroeconomic landscape has undergone dramatic shifts that have significantly affected the healthcare system and its equity objectives as illustrated in the figure 2. Between 1980 and 1990 the government of Zimbabwe implemented public health policies such as free access to health care and adoption of primary healthcare service delivery models across the country. These early health equity-based policies led to significant improvements in government healthcare infrastructures, recruitment and training of health care professionals including community health workers (Nyazema,2010, Nyoni,2018, Sibanda& Makwata,2017). By the end of 1990s these earlier positive public health initiatives were reversed due to implementation of Economic Structural Adjustment program which limited government funding to health and social care.

The government of Zimbabwe introduced the National AIDS Trust Fund in the year 2000, a payroll-based financing mechanism to support a multisectoral to support response the human immunodeficiency virus epidemic with a reported prevalence of 33.7% (United Nations,2001) which compounded by the existing high burdens of tuberculosis and malaria. Nonetheless due to controversial political decision between 1999 until 2008 lead to catastrophic collapse of the public health care system in Zimbabwe (Kanyeze et al.,2017, Munyenyiwa et al.,2022). From 2009 to 2013 there was noticeable public health policy reforms in Zimbabwe due to the economic stabilisation as well as, international donor re-engagement within the health sector (Zimbabwe Healthcare Financing

Report,2018). However, the public healthcare financing mechanisms remained mainly taxation-based (Chipunza& Nhamo,2023). Additionally, the government of Zimbabwe budgetary allocation have persistently been below the Abuja Declaration of 15%.

Consequently, to address the persistent bridge budgetary gaps a user-fee policy was introduced (Ministry of Health and Child Welfare,2019), making out-pocket payment the core financing for public-funded health services including diabetes in Zimbabwe (Zeng et al.,2018). Moreover, the predominate funding within in the Zimbabwe public health system is mainly from donors which accounted for up to 65% of health expenditures from 2016-2020(United Nations Children's fund,2021). Nonetheless the donor funding mechanisms tend to prioritise vertical disease programs such Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome, tuberculosis, malaria, maternal and children health programmes (Zeng et al.,2018, Zimbabwe Ministry of Finance and Economic, 2019), while inadvertently neglect much needed policies for communicable disease such as T2DM and mental health conditions(Illesnmi& Afolabi,2022).

While, user-fee exemption policy exists to protect vulnerable populations such as pregnant women, children under five, adults over the age of 65, people with huma deficiency virus, people with tuberculosis receiving direct observation therapy when seeking healthcare within public healthcare system. These social protection measures are not consistently applied within the public healthcare system(Nyazema,2010).Interestingly, chronic conditions such as T2DM are not covered by the existing social protections with diabetes care mostly funded by user fees(Zeng et al,2018).The user fee financing models may exacerbate financial vulnerability as well as led to cost-related non-adherence diabetes-related behaviours. The health funding policies changes are illustrated in figure 2 below:

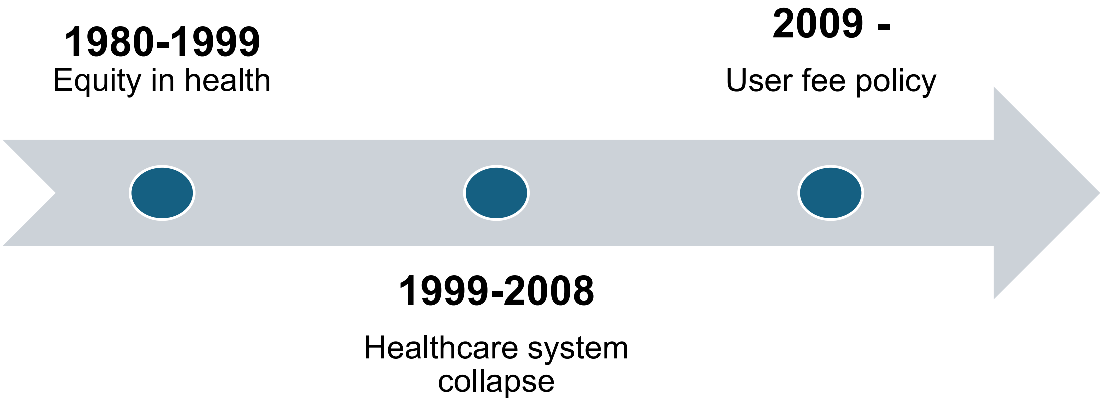

Figure 2. Zimbabwe Health Care Policies from 1980

1.7.3.1 Access to Medical Health Care Insurance

Only about 10% of Zimbabwe's population have access to medical health insurance which are provided as part of employment packages (Chipunza& Nhamo,2023;Maradze,2020;Musuka et al.,2021).With over 80% of adult employed within informal sectors or self-employed limiting their access to medical health insurance cover. Consequently, the existing public health landscape is associated with delays in healthcare seeking which may be associated with the high rates of undiagnosed T2DM in Zimbabwe(Labour and Economic Development Research Institute Zimbabwe,2018).Taken together the existing healthcare financing mechanisms in Zimbabwe may collectively act as barriers to diabetes self-care(Frimpong et al.2022,Nhapi et al.2019).

1.7.4 Gaps in Epidemiological Data

Zimbabwe has not conducted the World Health Organisation recommended non-communicable disease stepwise survey since 2005, this absence of up-to-date epidemiological data represents a critical barrier to placing the increasing burden of T2DM on Zimbabwe's public health policy agenda (Godman et al.,2020). Within resource constrained health care system such as Zimbabwe non-communicable diseases such as T2DM must complete with donor- funded communicable disease priorities. Furthermore, available literature suggests high prevalence of mental health conditions in Zimbabwe including depression (27.7%), anxiety(40%) and general psychiatric morbidity (Chopera et al.2021; Nyoni et al.,2019). Mental health services in Zimbabwe are decentralised and free at the point of access(Ministry of Child Welfare Zimbabwe,2022) systematic barriers exists such as the shortages of trained mental health professionals, erratic drug supplies and inadequate infrastructure hinder effective delivery of mental health services (Chibanda et al.,2020;Kidia et al.2017; World Health Organisation,2022).

1.8 Rationale for the Study

The lived experiences of diabetes self-care among people with T2DM extend beyond clinical management and is largely influenced by wider social determinants of health. While research from high-income countries have illuminated the influence of psychosocial factors on diabetes self-care activities, findings remain inconclusive and context-dependent (Browne et al., 2017; Devarajooh & Chinna, 2017; Fisher et al., 2012; Schmitt et al., 2021). Within sub-Saharan Africa, only few studies on the psychosocial aspects of T2DM were identified (Mogre et al., 2019; Opoku et al., 2023; Stephani et al., 2018).

Similarly, few qualitative studies (Hjelm & Mufunda, 2010; Mukonka et al., 2016) explored and identified barriers and enablers to diabetes self-care among people with T2DM in Zimbabwe. Nonetheless, these identified studies may have overlooked how the wider social determinants of health may interact multiple social identities, impacting their lived experiences of diabetes self-care of people with T2DM. It may be argued with these points to possible knowledge, population and methodological research gaps on psychosocial aspects of T2DM in Zimbabwe.

Consequently, this study addressed the above-identified research gaps by using an intrinsic qualitative case study approach and explored the lived experiences of diabetes self-care from the perspectives of people with lived experience (People with T2DM, self-identified caregivers, self-identified diabetes advocates [non-paid champions]) and those with professional experience (diabetes healthcare professionals) of T2DM in Zimbabwe. The multiple perspectives of the study's participants triangulated and interpreted using the Social Ecological Model and the Intersectionality Framework and provided a nuanced contextualised understanding of psychosocial health-related needs of people with T2DM in Zimbabwe.

1.9 Thesis Structure

Chapter 2 describes the integrative systematic review on the relationships among depression, diabetes-related distress, self-efficacy, and social support, and diabetes self-care activities in low to middle-income countries.

Chapter 3, Methodology, describes the study objectives, theoretical framework, research questions, participant recruitment process, methodology, methods, study setting, ethical considerations, data management, researcher positionality, and quality assurance strategies.

Chapter 4, Findings, discusses the themes and sub-themes of the felt and expressed psychosocial health-related needs of people living with T2DM in Zimbabwe, as generated from the narratives of various study participant groups.

Chapter 5, Discussion and Conclusion, summarises the thesis's key elements, highlighting how this study answered the posed research questions and contributed to new theory, knowledge, and practice, concluding with its impact and recommendations for clinical practice, policy, and future research.

1.10 Conclusion

The increasing prevalence T2DM in low-to middle-income countries, including its frequent comorbidity with depression and diabetes-related distress points to the urgent need for a more comprehensive understanding of the lived experiences of diabetes self-care. Such an understanding is essential for generating nuanced, context-specific insights into the perceived psychosocial health-related needs of people living with T2DM. These insights can, in turn, inform the development of patient-centred diabetes psychosocial care contextually appropriate health care models that better address the complex realities shaping diabetes self-care within low-resource settings such as Zimbabwe. Chapter 2 presents a comprehensive integrative literature review, examining the complex interrelationships among depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care practices among people with T2DM in low- to middle-income countries.

Chapter 2: Integrative Literature Review

2.1 Chapter overview

This chapter presents the results of the integrative systematic review that sought to understand the relationships between depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care among people living with T2DM in low- and middle-income countries. Despite extensive research in high-income countries on the relationship between depression, diabetes-related distress, and diabetes self-care remains inconclusive, partially due to variations in study designs, measurement tools, and population characteristics (Fisher et al., 2008; Gonzalez et al., 2008; Hoogendoom et al., 2021; Schmitt et al., 2021).

Additionally, psychosocial factors such as social support and self-efficacy have been shown to enhance self-care outcomes (Busebaia et al., 2023; Calli & Kartal, 2021; Schram et al., 2021).However, the mediating role of self-efficacy and social support on the relationship between depression, diabetes-related and diabetes self-care among people with T2DM remains inadequately understood. Thus, it may be argued that studies from high income countries valuable insights, they may fail to address the unique psychosocial and healthcare challenges in in low- and middle-income countries. No systematic review was found to have been conducted on the relationship between depression, diabetes distress, self-efficacy, and social support among people with T2DM in in low- and middle-income countries. This integrative review aimed to address this gap in the existing literature.

2.2 Integrative Systematic Review Methodology

The integrative review methodology of Whittemore and Knafl (2005) was used to explore the phenomena of interest. This methodology was chosen because of its ability to synthesise diverse literature types (i.e. quantitative, qualitative, methodological, and theoretical literature) and shed light on complex issues such as the relationships among multiple psychosocial factors (depression, diabetes-related distress, self-efficacy, social support) and diabetes self-care in LMICs, while maintaining a rigorous review process (Cronin & George, 2023; Toronto & Remington, 2020, p. 2).

2.3 Formulate Purpose and Review Question

The purpose of the integrative review was to:

1. Understand how social support and self-efficacy mediate the relationships among depression, diabetes-related distress and diabetes self-care among people with T2DM in low- to middle-income countries.
2. Explore the lived experiences of diabetes self-care of people with T2DM, depression, and diabetes-related distress in low- to middle-income countries.
3. Identify research gaps regarding lived experiences of depression, diabetes-related distress, self-efficacy, and social support among people with T2DM in low- to middle-income countries.

2.4 Strategy to Delineate the Review Question

Search terms were defined using the Population, Phenomena of Interest, and Context (PiCO tool) (see Appendix 1), a search strategy designed to ensure clarity, focus, and alignment with empirical and non-empirical studies as part of this integrative review (Booth et al., 2016).

2.5 The Review Question

What are the relationships between depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care among people with T2DM in low- to middle-income countries?

2.6 Inclusion and Exclusion Criteria for Studies

The next stage of this integrative review involved developing inclusion and exclusion criteria to establish the boundaries for the systematic review, as outlined in Table 2 below (Aveyard ,2018 pp 20; Preston & Aveyard, 2020, pp. 23–37).

Table 2. Inclusion and Exclusion Criteria

	Inclusion Criteria	**Exclusion Criteria**
Participants	Adults aged ≥ 18 years living with T2DM	Adults aged ≥ 18 living with T2DM in high-income countries. People living with T1DM, Gestational Diabetes, or Latent Autoimmune Diabetes or Type 3 diabetes or Type 5 diabetes.
Phenomena of Interest	Studies investigating the relationships between depression, diabetes-related distress, self-efficacy, and social support with diabetes self-care as the outcome of interest.	Studies that focus exclusively on depression, DRD, and diabetes self-care without examining additional phenomena. of interest (e.g., social support, self-efficacy).
Context	Low- and middle-income countries (Organisation for Economic Cooperation and Development List, 2023) (see Appendix 2).	Studies conducted in high-income countries.

Study Type	*Quantitative Studies:* Analytical cross-sectional studies examining relationships among depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care. *Qualitative Studies:* Focus groups, in-depth interviews, ethnography, phenomenology, grounded theory, case studies, narrative studies, and general qualitative studies exploring views, perceptions, and experiences regarding depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care. *Mixed-Method Studies*: Studies where quantitative and qualitative findings are separately reported and explore relationships among depression, diabetes related. distress, self-efficacy, social support, and diabetes self-care. .	Studies on the prevalence of depression or diabetes-related distress among people with T2DM Randomised control trials on the effectiveness of psychosocial interventions. Editorial comments on depression or diabetes-related distress among people with T2DM. Literature and systematic reviews on depression or diabetes-related distress among people with T2DM. (Reference lists will be searched to identify articles that may be relevant to this integrative review). *Theoretical Papers*: Addressing

		measurement of depression, diabetes-related distress, self-efficacy, social support/networks, and diabetes self-care.
Limits	Published in peer-reviewed journals. English Language Publication year: From 1995 onwards (based on the first publication of the PAID-20 for measuring diabetes distress questionnaire	Non-peer-reviewed publications Articles published in languages other than English. Studies published before 1995.

2.7 Search and Select Literature Systematically

This integrative review was registered on PROSPERO (reference CRD42021256344). Initially, consultation was sought from the Health Research Librarian and an Information Specialist at Lancaster University to refine the proposed search strategy, ensuring the use of appropriate keywords as well as to minimise bias (Middlebrooks et al., 2016). The search strategy was piloted in the Medical Literature Analysis and Retrieval System Online (MEDLINE) database, wherein the sensitivity and specificity of retrieved articles were evaluated using six studies which were deemed relevant to the review question (Amankwah-Poku et al., 2020; Cherrington et al., 2010; Gharaibeh et al., 2016; Mwila et al., 2019; Song et al., 2017; Zuberi et al., 2011).The author independently searched four databases: Psychological Information Database

(PsycINFO), Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Web of Science (WOS). These databases were selected because their catalogues included biomedical and psychological sciences literature. Additional grey literature sources (Ethos and ProQuest for thesis) were searched from 1995 until 02/2025.

1. MEDLINE – powered by EBSCOhost
2. PsycINFO – powered by EBSCOhost
3. CINAHL – powered by EBSCOhost
4. Web of Science (WOS) – Clarivate Analytics
5. ProQuest Dissertations & Thesis Global
6. British Library EThOS

Each of these databases was searched using a combination of free-text, Medical Subject Headings (MeSH)/Thesaurus/Keywords, and truncations (*), depending on the requirements of each database. The Boolean operator AND combined key concepts (S1, S2, and S3), while the operator OR combined similar key terms (Aveyard, 2018 pp 52) (see Appendices 3).

Additionally, citation tracking and alerts from Google Scholar, Lens.org, Metadata, and Connected Papers were reviewed periodically as well as the hand-searching of reference lists of relevant reviews systematic reviews to identify additional literature (Booth, 2016). ProQuest Dissertations & Thesis Global and British Library Ethos databases were also searched to identify published doctoral thesis that may be relevant to the review. Doctoral thesis often contains extensive reference lists that may help identify further resources and may offer novel perspectives not yet available published in peer-reviewed journals. As Toews and colleagues (2017) assert, including grey literature, such as doctoral dissertations and thesis, in the integrative review was essential for mitigating publication bias and obtaining a more comprehensive understanding of the phenomena of interest.

2.8 Managing and Screening Relevancy of Retrieved References

The research papers identified from each database were exported to the computer program EndNote X9 (Clarivate Analytics, 2013), which allowed for easier identification and removal of duplicate records (Peters, 2017). Firstly, titles were screened for keywords related to the phenomena of interest: depression, diabetes-related distress, and diabetes self-care behaviours among people living T2DM in low- to middle-income countries using a checklist (see Appendix 4). Studies were excluded at the title screening stage if:

I. Study participants were not living with T2DM.
II. Studies involving T1DM and T2DM participants were excluded if outcomes were not disaggregated by diabetes type.
III. The study was conducted in high-income countries.

Abstracts were subsequently screened to ensure relevance. Inclusion criteria at the abstract screening stage included:

Study participants were adults aged ≥ 18 years.

The study design was documented as analytical/correlational cross-sectional, qualitative, or mixed-method, and explored relationships among the phenomena of interest.

Studies were excluded at the abstract stage if:

I. They focused solely on prevalence or incidence rates of depression or diabetes-related distress without exploring relationships among other phenomena of interest (social support, self-efficacy, and diabetes selfcare).
II. They were randomised controlled trials.
III. They were systematic or literature reviews (reference lists were reviewed to identify additional studies).
IV. The study was conducted in high-income countries.

Screening for study relevance at the full article review stage entailed a comprehensive examination of the full content to determine its suitability for inclusion. Key sections of each article were systematically reviewed for relevance to the review questions. All inclusion criteria were evaluated, including study population, study setting, phenomena of interest (depression, diabetes-related distress, social support, self-efficacy), and the outcome measures (diabetes self-care or lived experience of diabetes self-care). While an integrative review includes diverse research methodologies (Whittemore & Knafl, 2005), the appropriateness of each study design was verified.

Studies were excluded at the full article screening stage if:

I. Study participants were not living with T2DM.
II. Studies involving both T1DM and T2DM participants were excluded if outcomes were not disaggregated by diabetes type.
III. Studies conducted in high-income countries.
IV. The study was irrelevant to the review topic (i.e., it did not explore depression, diabetes distress, social support, self-efficacy, and diabetes self-care).
V. Outcome of measure was not diabetes-self-care.

The principal researcher conducted all stages of this integrative review, with valuable feedback sought from the supervisors. This integrative review was planned, implemented, and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines (Page et al., 2021). The PRISMA 2020 checklist contains twenty-seven essential items that ensure transparency in systematic review reporting.

The summary of decisions made during each stage is documented in the PRISMA flow diagram below. Twenty-two studies met the full eligibility criteria for this review and were evaluated for quality.

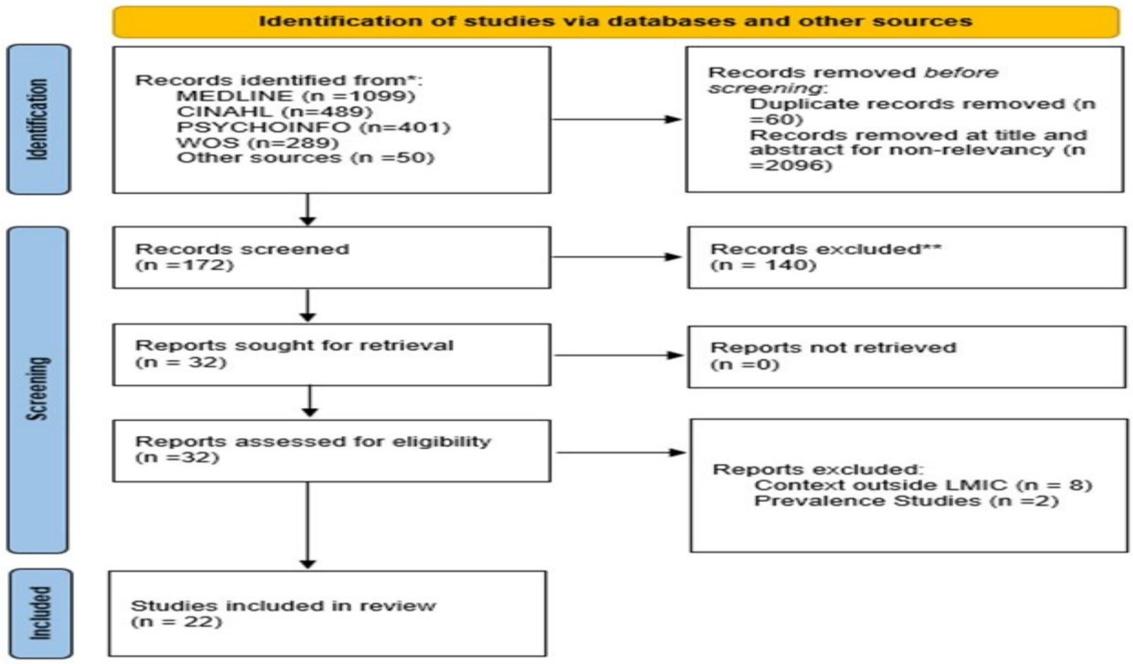

Figure 3. Prisma Flow Chart
Source : Page et al.,2020

2.9 Quality Appraisal and Data Extraction

2.9.1 Quality Appraisal

This integrative review identified quantitative and qualitative peer-reviewed studies. The 22 studies identified for this review varied in their aims and methodologies. A critical evaluation or quality assessment is essential, as poorly conducted or reported studies can lead to unreliable findings (Toronto & Remington, 2020). While no universal methodology exists for assessing research quality, there is broad consensus that studies included in an integrative review should undergo rigorous evaluation (Buccheri & Sharifi, 2017; Whittemore et al., 2014). However, Crowe and Sheppard (2011) argue that while study-specific checklists provide thorough evaluations, they often limit comparisons across different research designs, making it difficult to synthesise evidence from both qualitative and quantitative studies.

Hawker et al. (2002) developed a critical appraisal checklist to address this challenge. This checklist provides a standardised framework for assessing methodological quality without inherently favouring one study type over another. The strength of this approach lies in its adaptability and inclusiveness. It is particularly useful in mixed-methods research or systematic reviews integrating diverse forms of evidence, such as this integrative review.

Hawker et al.'s (2002) critical appraisal tool contains nine questions that can be answered as 'good', 'fair', poor', or 'very poor'. After applying the Hawker tool to the included studies, findings were converted into a numerical score by assigning the answers from one point (very poor) to four points (good). The summation produced a score for each study ranging from a minimum of nine points to a maximum of 36 points. The following definitions were used to create overall quality grades of studies: high quality: 30–36 points; medium quality: 25–29 points; low quality: 9–24 points. None of the low-quality graded studies were excluded, as it was deemed that the studies reported data that were relevant to the posed review question(s) as their exclusion would have potentially adversely affected the generalisability of the review findings (Campbell et al. 2012).

2.10 Data Extraction

Data extraction and critical appraisal steps were conducted concurrently. This stage entailed the organisation of data to facilitate the examination of findings from the included studies. A matrix tool (Garrard, 2020; see Appendix 5) was utilised to categorise findings into sub-groups aligned with the review questions, general study characteristics, and concepts of interest depression, diabetes-related distress, self-efficacy, social support and the outcome of interest diabetes self-care. This structured data reduction approach made it easy to transition from summary, analysis and interpretation (Popay et al.,2006).

Furthermore, this stage was crucial in critically analysing the findings, identifying gaps and inconsistencies, elucidating methodological limitations, and establishing a robust foundation for comprehensive review insights. This approach also aimed to promote transparency in decision-making. Academic supervisors independently reviewed the extraction and appraisal of retrieved studies to ensure quality assurance. The main details extracted from the included studies are presented in the table below.

Table 3.Summary of Included Studies

Country	Study Participants	Study Design & Data Collection	Concepts of Interest Studied	Theoretical Framework	Quality Approved Total Score (Max = 36)	Authors (Year)
Brazil	16 patients with T2DM	Qualitative study using telephone semi structured in-depth interviews	Psychosocial factors of living with diabetes mellitus, social support, selfcare	None	32/36 High	Giarola Cecilio et al. (2016)
China	265 aged ≥ 18 with T2DM	Analytical cross-sectional survey	Diabetes related distress, self-efficacy, selfcare	None	35/36 High	Jiang et al. (2019)

China	240 elderly patients with T2DM	Analytical cross-sectional study	Depression Self-Efficacy Self-care	None	34/36 High	Jiang et al. (2023)
China	900 adults with T2DM	Analytical cross-sectional study	Depression Diabetes distress Self-efficacy Self-Care	Self	36/36 High	Gao et al. (2022).
China	26 people with T2DM	A descriptive qualitative study	Mental health Social support Self-care	Health Belief Model (HBM	33/36 High	Liu et al., (2022).

Dominican Republic	28 people with T2DM	General qualitative study	diabetes related distress social support	None	35/36 High	González et al. (2019).
Ghana	162 people with T2DM	Analytical cross-sectional study	Depression, diabetes distress, social support, selfcare.	None	32/36 High	Amankwah-Poku et al. (2020)
Indonesia	546 patients with T2DM	Analytical cross-sectional study	Depression, diabetes distress, family support, foot care	None	34/36 High	Sari et al. (2020)

Indonesia	94 patients with T2DM	Analytical cross-sectional study	Depression, Social support Self-care	None	32/36 High	Enggarwati et al. (2022)
Iran	228 with T2DM	Analytical cross-sectional study	Diabetes distress, social support Self-efficacy Self-care	Social Cognitive Theory	34/36 High	Rabiei et al. (2018)
Jordan	339 aged ≥ 18 with T2DM	Analytical cross-sectional study	Depression, social support function, structure and quality, self-efficacy,	DSM-IMB model	32/36 High	Al-Dwaikat et al. (2021)

			selfcare activities			
Jordan	220 aged ≥ 18 with T2DM	Analytical cross-sectional study	Depression, self-efficacy, social support, selfcare	Social Cognitive Theory (SCT)	32/36 High	Al-Amer et al. (2016)
Malaysia	338 aged ≥ 30 with T2DM	Analytical cross-sectional study	Diabetes distress, depression, self-efficacy, self-care	None	35/36 High	Chew et al. (2018)

Malaysia	371 aged ≥ 18 with T2DM	Analytical cross-sectional study	Depression, diabetes distress, self-efficacy, self-care	Self	36/36 High	Devarajooh & Chinna (2017)
Malaysia	187 aged ≥ 20 with T2DM	Analytical cross-sectional study	Depression, diabetes distress, self-efficacy, Social support Self-care	None	34/36 High	Yap et al. (2015)
Mexico	60 aged with T2DM	Analytical cross-sectional study	Depression, self-efficacy, self-care	None	34/36 High	Guerrero et al. (2017)

Mexico	176 with T2DM	Analytical cross-sectional study	Depression, diabetes distress, social support, selfcare	None	25/36 Medium	Lerman et al. (2004)
Mexico	8 patients with T2DM	Interpretive phenomenology Approach	Self-care, social support	None	36/36 High	Vicente et al. (2019)
Tunisia	100 with T2DM	Analytical cross-sectional study	diabetes-related distress Self-efficacy, Self-care	None	18/36 Low	Abdelghaffar et al. (2020)

Türkiye	200 with T2DM	Analytical cross-sectional study	Depression, self-efficacy, self-care	Social Cognitive Theory	31/36 High	Kav et al. (2017)
South Africa	27 with T2DM	Qualitative Study	Emotional stress, selfcare, social support	None	32/36 High	Mendenhall & Norris (2015)
Zambia	28 with T2DM	Qualitative study	Diabetes-related distress social support	None	34/36 High	Mwila et al. (2019)

2.11. Characteristics of Included Studies

The 22 empirical studies were conducted in 13 low- to middle-income countries (Brazil, China, Dominican Republic, Ghana, Indonesia, Iran, Jordan, Malaysia, Mexico, Tunisia, Türkiye, South Africa, and Zambia). The sample sizes of participants in the retained studies varied from eight to 900. Sixteen included studies in this review were quantitative cross-sectional studies, and six were qualitative.

2.12 Data Analysis and Synthesis

The 16 identified analytical cross-sectional studies exhibited significant variability, primarily due to the range of instruments used to evaluate phenomena of interests such as depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care. This high degree of heterogeneity rendered a meta-analysis unfeasible.

2.13. Summary of Quantitative Studies

Following Popay and colleagues (2006) guide to narrative synthesis, the 16 quantitative studies were grouped and clustered based on the phenomena of interest: depression, diabetes-related distress, self-efficacy, social support, and self-care. The quantitative data findings were synthesised narratively and presented as a rubric that explored the relationships within and between the identified articles based on key phenomena of interest (Pope & Popay, 2006).

2.13.1 Relationships Among Diabetes-related Distress, Self-Efficacy, Social Support and Diabetes Self-Care.

Four of the sixteen reviewed studies (Abdelghaffar et al., 2020; Chew et al., 2018; Jiang et al., 2019; Rabiei et al., 2018) examined the correlational relationships among diabetes-related distress, self-efficacy, social support, and diabetes self-care. These studies consistently identified self-efficacy as the strongest predictor of self-care, while higher levels of diabetes-related distress were associated with poorer diabetes self-care.

However, after adjusting for covariates the three studies (Abdelghaffar et al., 2020; Chew et al., 2018; Rabiei et al., 2018) reported that the direct relationships among diabetes-related distress, social support, and diabetes self-care were not statistically significant, suggesting that their influence may be indirect or mediated by another factor on the pathway. Notably, Jiang et al. (2019) is the only study that reported on mediating effect of self-efficacy on the relationship between diabetes-related distress and diabetes self-care, reinforcing the pivotal role of self-efficacy in diabetes care. These findings highlight the need for future research to explore the mediating role of self-efficacy using robust analytical approaches such as structural equation modelling, as applied in Jiang et al. (2019).

2.13.2 Relationship Among Depression, Self-Efficacy and Diabetes Self-Care

Four out of sixteen quantitative papers (Al-Amer et al., 2016; Kav et al., 2017; Guerrero-Pacheco et al.; 2017 Jiang et al. 2023), explored relationships among depression, self-efficacy, and diabetes self-care. Al-Amer and colleagues (2016), using structural equation modelling analysis, revealed an indirect relationship between depression and diabetes self-care that was mediated by self-efficacy. Specifically, Al-Amer and colleagues (2016), results showed that depression had a negative impact on self-efficacy ($\beta = -0.20$; $p = 0.003$), which suggests that people with T2DM experiencing higher levels of depression may have lower confidence in their ability to follow diabetes self-care recommendations.

Overall, the identified findings suggest that the relationship among depression, self-efficacy, and diabetes self-care is unclear. While the study by Al-Amer and colleagues (2016) reported that self-efficacy fully mediates the relationship between depression and diabetes self-care, Jiang and colleagues (2023) reported that indirect effects of self-efficacy on diabetes self-care via depression was significant (($\beta = 0.022$, $p < 0.05$) which suggests that depression has the mediating role on the path between self-efficacy and diabetes self-care.

Other two studies (Kav et al., 2017; Guerrero-Pacheco et al., (2017) did not carry mediating effect analysis and reported negative correlations between depression and diabetes self-care. As a result, these studies may have overlooked the possible mediating role of self-efficacy on the relationship between depression and diabetes self-care. Thus, the findings suggest a need for future research to consider using statistical analytical techniques such as structured equation modelling or bootstrapping (Al-Amer et al.,22016; Jianget al.,2023) to analyse the possible mediating role of self-efficacy on the relationship between depression and diabetes self-care.

2.13.3 Relationship Among Depression, Social Support, Self-Efficacy and Diabetes Self-Care

Two analytical cross-sectional studies (Al-Dwaikat et al., 2021; Enggarwati et al., 2022) examined the relationships between depression, social support, self-efficacy, and diabetes self-care. Al-Dwaikat and colleagues (2021) found a positive link between social support and self-efficacy (r = 0.19, p = 0.006) but no significant connection between depression and self-care (r = -0.05, p = 0.448). However, Al-Dwaikat and colleagues (2021) did not consider the mediating role of social support or self-efficacy on the relationship between depression and self-care. Similarly, Enggarwati and colleagues (2022) identified significant correlations with depression reported as inversely related to social support (r = -0.288). Social support was positively linked to self-care (r = 0.418) and negatively associated with diabetes self-care (r = -0.578). Their path analysis showed that social support partially mediated the relationship between depression and diabetes self-care, explaining 40.3% of the total effect. However, Enggarwati and colleagues (2022) reported Sobel test statistic (z = -0.162) below the significance threshold (|z| < 1.96). Despite this, Enggarwati and colleagues (2022) interpreted the mediation role of social support as significant, suggesting a possible reporting error or misinterpretation that should be viewed with caution. Taken together the existing evidence remains insufficient to determine whether social support or self-efficacy act as mediating variables on the relationships among depression and diabetes self-care.

2.13.4 Relationship Among Depression, Diabetes-Related Distress, Self-Efficacy and Diabetes Self-Care

Two studies (Devarajooh & Chinna, 2017; Gao et al., 2022) examined the relationships between depression, diabetes distress, self-efficacy, and self-care activities. The study by Devarajooh and Chinna (2017) demonstrated that depression negatively influenced self-efficacy (path coefficient = -0.115, $p < 0.01$), which subsequently affected self-care adherence. Diabetes-related distress also negatively impacted self-efficacy (path coefficient = -0.122, $p < 0.001$), resulting in reduced adherence to diabetes self-care.

Similarly, Gao and colleagues (2022) reported that diabetes-related distress and depressive symptoms negatively influenced the ability of people with T2DM to follow health diet recommendations (diabetes-related distress β = 0.238, 95% CI [0.350, 0.141]; (depressive symptoms β = 0.010, 95% CI [0.016, 0.005]). Additionally, people with T2DM experiencing high levels of diabetes -related distress or depression engaged in less physical activity due to diminished self-efficacy (diabetes-related distress β = 0.446, 95% CI [0.630, 0.283]; (depressive symptoms β = 0.019, 95% CI [0.030, 0.010]). These two studies collectively indicate that self-efficacy serves as the primary meditating mechanism through which depression and diabetes-related distress influence people with T2DM's ability to follow recommended diabetes self-care.

2.13.5 Relationship Among Depression, Diabetes-Related Distress, Social Support and Diabetes Self-Care

Three of the sixteen identified quantitative papers (Amankwah-Poku et al., 2020; Lerman et al.; 2004; Sari et al., 2020) reported the relationships between depression, diabetes-related distress, social support, and diabetes self-care. Amankwah-Poku and colleagues (2020) reported negative correlations between diabetes-related distress and exercise self-care, but not with medication selfcare. Furthermore, the study reported negative but non-significant correlations of depressive symptoms with diet ($r = -0.15$), exercise ($r = -0.15$), and medication self-care ($r = -0.5$), indicating weak associations between depression and these diabetes self-care activities.

Notably, the Amankwah-Poku and colleagues (2020) reported on three statistically significant positive correlations suggesting that supportive family behaviours were associated with better diabetes self-care (i.e. engagement in diet ($r = 0.18$, $p < 0.05$), exercise ($r = 0.25$, $p < 0.01$), and medication self-care ($r = 0.25$, $p < 0.01$). However, Amankwah-Poku and colleagues (2020) did not conduct mediating analysis on the role of social support on the relationships among depression, diabetes-related distress and diabetes self-care.

In contrast Sari et al., (2020) conducted a multiple regression analysis to investigate the factors influencing foot care among people with T2DM. The study revealed the following significant findings that higher levels of diabetes-related distress were correlated with better foot care practices. Although depression was found to have a negative correlation with foot care, the relationship was not statistically significant ($p = 0.212$). Additionally, family support was found to have a statistically significant and positive effect on foot care, with a beta coefficient of 0.179 and a p-value of 0.000. This finding suggests that increased family support is associated with better foot care practices, highlighting the importance of social support in diabetes care. To assess the individual factors that predict self-care behaviours, Lerman et al., (2004) employed multivariate models. The researchers discovered that among the 47.7% of participants, lower levels of depression were significantly associated with better adherence to diabetes self-care activities ($p = 0.0456$). Specifically, individuals with lower depression levels were more likely to engage in meal planning, exercise, and diabetes medication. However, no significant differences ($p = 0.19$) were reported between diabetes-related distress and diabetes self-care. Additionally, no significant differences ($p = 0.10$) in social support were detected across adherence levels for the three diabetes self-care activities. While Sari and colleagues, (2020) reported that heightened diabetes distress was linked to improved foot care is interesting, the other studies (Amankwah-Poku et al., 2020; Lerman et al., 2004) reported no significant relationships between diabetes-related distress and diabetes self-care.

All three studies pointed to a positive correlation between diabetes self-care and social support, none of three identified studies examined the potential mediating role of social support on the relationships among depression, diabetes-related distress, and diabetes selfcare. Additionally, there was considerable heterogeneity in the methods used to evaluate variables of interest, which further limits the ability to draw meaningful conclusions.

2.13.6 Relationships Among Depression, Diabetes-Related Distress, Social Support; Self-Efficacy and Diabetes Self-Care.

One of the sixteen quantitative studies, by Yap et al., (2015), reported that diabetes self-care was positively correlated with self-efficacy ($r = 0.5$) and social support ($r = 0.27$), and negatively correlated with depressed feelings ($r = -0.33$) and distress ($r = -0.22$). The reported positive correlations indicate that perceived self-efficacy and social support are positive predictors of diabetes self-care engagement. On the other hand, the negative correlations suggest that both depressive symptoms and diabetes-related distress may adversely affect people with T2DM's ability to follow diabetes self-care recommendations. However, Yap et al. (2015) did not study the possible mediating role of self-efficacy and social support on the relationships among depression, diabetes-related distress, and diabetes self-care.

2.13.7 Summary of Included Quantitative Studies

Among the sixteen quantitative studies reviewed, only six used advanced statistical methods such as structured equation modelling or bootstrapping to examine mediating roles of self-efficacy or social support between depression, diabetes-related distress, and diabetes self-care as illustrated in Table 4 below This highlights a gap in literature, especially in low- and middle-income countries, where these mechanisms remain insufficiently explored.

Table 4. Evidence of the use of Advanced Statistical Methods

Studies on Diabetes -related Distress, Social Support and / or Self-Efficacy, and Diabetes Self-Care			
Authors	Key Variables	Mediation Tested	Key Findings
Abdelghaffar et al. (2020)	Diabetes -related distress Self-Efficacy, Self-Care	X	Did not consider mediation role of self-efficacy on the relationship between diabetes-related distress and diabetes self-care
Chew et al. (2018)	Diabetes -related distress Self-Efficacy, Self-Care	X	Did not consider mediation role of self-efficacy on the relationship diabetes-related distress and diabetes self-care.
Jiang et al. (2019)	Diabetes -related distress Self-Efficacy, Self-Care	☑	Suggests self-efficacy is a key mediator on the relationship between diabetes-related distress and diabetes self-care.
Rabei et al. (2018)	Diabetes -related distress Self-Efficacy, Social Support Self-Care	X	Suggests self-efficacy indirectly mediates the relationship between diabetes -related distress, social support and diabetes self-care.
Studies on Depression, Self-Efficacy, social support and Diabetes Self-Care.			
Al-Amer et al. (2016)	Depression, Self-Efficacy, Self-Care	☑	Suggests self-efficacy buffers the effect of depression on diabetes self-care.

Kav et al. (2017)	Depression, Self-Efficacy Self-Care	X	Did not consider the possible mediation role of self- efficacy on relationship between depression and diabetes self-care
Guerrero Pacheco et al. (2017)	Depression, Self-Efficacy, Self-Care	X	Did not consider the possible mediation role of self- efficacy on relationship between depression and diabetes self-care
Jiang et al. (2023)	Depression	X	Did not consider the possible mediation role of self- efficacy on relationship between depression and diabetes self-care
Al-Dwaikat et al. (2021)	Depression, Social Support Self-Efficacy, Self-Care	X	Did not consider the possible mediation role of self- efficacy or social support on the relationship between depression and diabetes self-care.
Enggarwati et al. (2022)	Depression, Social Support, Self-Care	☑	Partial mediation reported, but Sobel test value was below the significance threshold. Sobel z = -0.162; reported as significant.
Studies on Depression, Diabetes -related Distress, Self-efficacy, Social Support and Diabetes Self-Care.			

Devarajooh & Chinna (2017	Depression, Diabetes-related distress Self-efficacy, Self-care	☑	Strong evidence of the mediation role of self-efficacy on the relationship between depression, diabetes-related distress and diabetes self-care.
Gao et al. (2022)	Depression, Diabetes-related distress Self-Efficacy, Self-care	☑	Showed evidence of the mediation role of self-efficacy on the relationship between depression, diabetes-related distress and dietary and physical activity diabetes self-care activities only.
Amankwah-Poku et al. (2020)	Depression Diabetes -related distress Social Support Self-Care	X	Did not consider the mediation role of social support on the relationship among depression, diabetes-related distress and diabetes self-care
Lerman et al. (2004)	Dépression, Diabetes-related distress Social Support Self-care	X	Did not consider the mediation role of social support on the relationship among depression, diabetes-related distress and diabetes self-care
Sari et al. (2020)	Depression, Diabetes-related distress Family Support Foot Care	X	Did not consider the mediation role of social support on the relationship among depression, diabetes-related distress and diabetes self-care.

Yap et al. (2015)	Depression, Diabetes-related distress Social support Self-efficacy, Self-care	X	Did not consider the mediation role of social support or self-efficacy on the relationship among depression, diabetes-related distress and diabetes self-care

*☑ Used SEM/ Bootstrapping ✗ Did not use SEM/ Bootstrapping

2.14 Qualitative Studies

The six qualitative studies (Giarola et al,2016; Gonzalez et al., 2019; Liu et al., 2022; Mendenhall et al.,2015; Mwila et al., 2019; Vicente et al., 2019) were included in this review. The identified papers were extracted and imported into NVivo 12, a Computer Assisted Qualitative Data Analysis Software program. The verbatim quotes found in the *abstracts*, *findings*, or *results* sections of each of the six qualitative papers were analysed inductively using reflexive thematic approach (Braun & Clarke, 2021). The themes and sub-themes that captured the lived experiences diabetes self-care among people with T2DM in low-to middle income countries (Brazil, China, Dominican Republic, Mexico, South Africa, and Zambia) are summarised in Table 5 below.

Table 5. **Summary of Themes and Sub-Themes from Qualitative Studies**

Theme	**Sub- Themes**
1.Navigating Diabetes Self-Care	1.1 Developing essential skills for selfcare. 1.2 Experiencing mental health struggles.
2.Barriers and Enablers in Diabetes Self-Care	2.1 Experiencing sub-optimal social determinants of health. 2.2 Challenges navigating the healthcare system.
3. Who supports me?	

2.15 Navigating Diabetes Self-Care

This theme highlights the ongoing efforts of participants to manage their condition while facing various personal, social, and structural obstacles. The two sub-themes illustrated the lived experience diabetes self-care as continuous learning journey and demonstrated how people with T2DM understand their diagnosis and integrate complex self-care practices into their everyday routines, often with limited resources and psychosocial support.

2.15.1 Developing Essential Skills for Self-Care

This sub-theme captured the views and perceptions of people with T2DM regarding engaging in recommended diabetes self-care. Diabetes self-care activities reported in the included studies included healthy eating (Gonzalez et al., 2019; Vicente et al., 2019), healthy eating and physical activity (Giarola et al., 2016), healthy eating, physical activity, medication adherence (Mendenhall et al., 2015; Mwila et al., 2019), and lifestyle modifications, medication, and blood sugar monitoring (Liu et al., 2022). Participants' narratives indicated that diabetes selfcare is complex, requiring adherence to medication, problem-solving, and lifestyle changes. While most participants were aware of the need to engage in the recommended self-care activities such as following a diabetes diet, physical exercise, monitoring blood glucose levels, and seeking health care at defined times most found this challenging:

> “Sometimes I eat at a good time. It just depends on the circumstances. I do manage to inject myself on time, but sometimes I feel lazy and just say, I sleep like this without injecting tonight. And I take the injection in the morning” (Participant, Mwila et al., 2019).

> “I do little exercise in daily life, which is a habit formed for a long time. I don’t like running, I don’t like sports, and I don’t like dancing” (Participant, Liu et al., 2022).

Participants in some studies (Mendenhall et al., 2015; Mwila et al., 2019) expressed fatalistic health beliefs that may act as potential barriers to diabetes self-care, such as believing that T2DM was caused by 'witchcraft' or that faith healers helped with their diabetes:

> “I have been to a faith healer and asked for special diabetes prayers. It was during the time that I was seriously sick, and he helped me as I feel a lot better now” (Participant, Mendenhall et al.,2015).

2.15.2 Experiencing Mental Health Struggles

Participants viewed living with T2DM as 'emotionally distressing' (Gonzalez et al., 2019; Mwila et al., 2019). Emotional distress was reported at the time of diagnosis and during the adjustment phases. As the disease progressed, emotions experienced were mostly related to fear of diabetes complication, its chronicity, and the lack of a cure.

> “I felt a little sad because [diabetes] is a disease that, according to the professionals, is incurable” (Participant, González et al., 2019).

Furthermore, the consequences and complications of T2DM such as the loss of vision, lethargy, foot pain, and sexual problems (Mwila et al., 2019; Vicente et al., 2019) were reported to affect people with T2DM’s ability to perform recommended self-care activities, thereby acting as barriers.

> “It affects your eyes, kidneys, they can amputate parts of you. Especially in your feet, even sometimes, it can harm your hands “(Participant, Vicente et al., 2019).

In addition, the identified studies (Giarola et al., 2016; Gonzalez et al., 2019; Liu et al., 2022; Mwila et al., 2019) reported that T2DM and its comorbidity with affective disorders such as depression and diabetes-related distress were potential barriers to diabetes self-care. Also, the multi-component treatment of T2DM including medication adherence and lifestyle changes led to people with T2DM feeling sad, depressed, and emotionally distressed. Participants expressed that the frequency and ongoing efforts required to follow recommended various diabetes self-care activities negatively affected their mental health wellbeing.

> “Living with Diabetes is worse when you think about it. It is worse because you can even die of depression if you think about that" (Participant, Gonzalez et al., 2019).

> “Ah to apply [insulin] every day is not easy, is it? Oh, my end will be very sad, right “(Participants, Giarola et al., 2016).

2.16. Barriers and Enablers in Diabetes Self-Care

This theme and its sub-themes captured the lived experiences of people with T2DM, highlighting both the barriers and enablers of diabetes self-care within low-to middle-income countries. Additionally, it reflected how people with T2DM navigated the daily demands of diabetes self-care while dealing with wider socio-economic challenges characteristic of low-to middle-income countries.

2.16.1 Experiencing sub-Optimal Social Determinants of Health

This sub-theme captured how social determinants of health factors influence and impacted the lived experience of diabetes-self-care of people with T2DM. Participants in most of the included qualitative papers (Giarola et al., 2016; Gonzalez Rodriguez et al., 2019; Mendenhall et al., 2015; Mwila et al., 2019; Vicente et al., 2019) reported experiencing financial hardships that prevented them from engaging in the recommended diabetes self-care. As a result, most participants reported experiences of cost-related non-adherence behaviours as they struggled to buy the prescribed diabetes specific food because of cost and not easily accessible, pointing to possible diabetes-related food insecurity.

> “Due to the lack of money, I cannot keep buying dietary things because they are more expensive” (Participant, Giarola et al., 2016).

> “There are people who can follow their diet, but many cannot. We often must eat things that we should not eat because [living with] hunger is hard. Diabetes is harder for the poor. I would say it is much harder. I feel bad for those of us who suffer from this illness. Sometimes I go to sleep hungry, and more so when one lives in the countryside. Things in the countryside are very difficult” (Participant, Gonzalez et al., 2019).

Furthermore, living with T2DM was reported to negatively impact people with T2DM’s ability to engage in meaningful economic productivity suggesting that living with T2DM may reduce the income-earning potential, further exacerbating feelings of financial instabilities.

> “Now I can’t sell much as before; I don’t have as much as I used to” (Participant, Vicente et al., 2019).

2.16.2 Challenges Navigating the Healthcare System

This sub-theme illustrated the vital role of the healthcare system in diabetes care within low- to middle-income countries. However, systematic barriers within the healthcare system were reported, such as long waiting periods, lack of multidisciplinary diabetes care teams, poor facility infrastructure, persistent out-of-pocket cost payments, and the non-availability of appropriate and adequate diabetes resources such as glucose testing strips and essential drugs.

> “The clinic is ill-equipped because, at times there aren't enough gadgets to test either our sugar levels or just our blood pressure. At times, the toilets are out of order. Wait time was the most common complaint. Seeing the doctor requires some patience, and I have become used to

> the long queues. I get there at about 7 AM only to see the doctor at 12 noon “(Participant, Mendenhall et al., 2015).

People with T2DM in some of the studies (Mendenhall et al., 2015; Mwila et al., 2019) reported that limited medical health insurance coverage left them facing catastrophic out-of-pocket payments hindered their ability to engage in the recommended diabetes self-care.

> “They give medicine here, but it doesn’t last long, so I buy to supplement the shortage. The medication is a bit expensive. But I have no option but to buy” (Participant, Mwila et al., 2019).

> “I first went to the community clinic, but there’s usually no medication available, so they tell you to buy it” (Participant, Mendenhall et al., 2015).

2.17 Who Supports Me?

This theme reported on the people with T2DM perceived types of support and their source that included family, spouses, friends, diabetes healthcare professionals, and peer support groups. Five of the identified studies (Giarola et al., 2016; Gonzalez et al., 2019; Liu et al., 2022; Mendenhall et al., 2015; Mwila et al., 2019) illuminated the role of social support and networks as an important part of the social context in which diabetes self-care occurs.

Family members were mostly reported as sources of instrumental and emotional support. However, there were noticeable gender differences in the perceived social support among men with T2DM. They reported that their wives or partners were the main sources of both instrumental and emotional support.

> “It's the same as walking, if I have to go alone, I get discouraged. She [wife] is my companion. And she charges me too much; she comes and asks if I walked. She keeps on trying to make me go to the gym, but I don't want to go to the gym much “(Participant, Giorola et al., 2016).

> “I’m living with my wife. My wife made a healthy lifestyle plan for me. She wanted me to do more exercise, to eat more vegetables. And I would try to do what she wants me to do” (Participant, Liu et al., 2022).

The provision of emotional support was reported to help people with T2DM cope with the demands of diabetes self-care by buffering the effects of emotional distress, leading to improved diabetes self-care. For example, participants referred to the shared lived experiences of T2DM within their social networks (parents, siblings, nieces, friends) to normalise the diabetes experience and selfcare.

> “People have been supportive [of my diabetes]. My neighbour now also has it, and we are always talking about it together and I enjoy being around her. We usually share a laugh about it sometimes” (Participant, Mendenhall et al., 2015).

> “My family was worried about my current health status. They wanted me to have a healthy diet. For me to have a healthy diet, my daughter formulated a diabetes diet plan for me” (Participant, Liu et al., 2022).

However, some people with T2DM (Gonzalez et al., 2019; Mwila et al., 2019) reported experiencing unhelpful and undermining support from their social networks which they perceived diminished their autonomy and ability to solve their problems. For example, during social gatherings people with T2DM were offered unwanted nutritional recommendations. Most participants expressed their frustration, saying this may lead to emotional distress, diabetes-related stigma, exclusion from social gatherings, and unending pressure to eat unhealthy food as a situational strategy to fit expected societal norms.

> “I get depressed sometimes because if one goes to a function, one can’t eat the food they serve their freely. So, it makes me feel out of place. Also, I am forced to eat that food despite the food not being healthy for me” (Participant, Mwila et al., 2019).

In addition, some behavioural responses of social network members were reported as unhelpful. For example, women with T2DM expressed their frustrations due to the lack of instrumental and emotional support from immediate family members, such as spouses and children.

> “I think the food part is the most stressful one. I am the only one that's diabetic at my home, and the kids prepare food in a manner that is not always compatible with my condition. Spicy food upsets my health” (Participant, Mendenhall et al., 2015).

> “I have it very tough as a diabetic. My children really have a tough time. When I buy these DM recommended foods, they complain that I am buying expensive food. When in actual sense, the same food doesn't even taste nice. So, my heart is really troubled” (Participant, Mwila et al., 2019).

Unsupportive interactions were also experienced from social network ties in the workplace, the community, and the healthcare system. People with T2DM felt judged or blamed for their diabetes, resulting in perceived and actual diabetes-related stigma.

> “Well, they would tell me, what did you do that your sugar increased? What happened?” (Participants, Gonzalez Rodriguez et al., 2019).

2.18 Integration of Quantitative and Qualitative Study Findings

Findings from the quantitative and qualitative papers were integrated using a triangulation protocol (O’Cathain et al., 2010) by creating a ‘convergence coding matrix’ to display findings emerging from each study component on the same page. As this integrative review identified quantitative and qualitative studies triangulation of the findings was performed across the two data sets as a way to gain deeper insights on the phenomena of interest (Flick, 2018 pp 527-544).

Data triangulation can yield four possible outcomes: convergence/agreement, partial agreement, dissonance, or silence (Vogl et al., 2019; Vogl et al.,2024). Thus, consideration of agreement, partial agreement, silence, or dissonance led to a conclusion drawing and verification, thereby generating a new perspective (Torraco, 2016). Key thematic themes across the quantitative and qualitative data sets were compared. Results were interpretated and presented narratively as ‘agreement’ if there was full agreement between the quantitative and qualitative data, ‘partial agreement’ if there was some disagreement between data sets, ‘dissonance’ if there were total disagreements, and ‘silence’ if only one of the data sets covered the themes. The section below summarises evidence on integrating both quantitative and qualitative findings, as thematic results from quantitative and qualitative data sets were compared to find overlaps. Results were coded based on final interpretation as ‘agreement’ if there was full agreement, ‘partial agreement’ if there was some disagreement within or between data sets, ‘dissonance’ if there were total disagreements, and ‘silence’ if only one of the data sets covered the themes.

2.18.1 Instances of Agreement and Partial Agreement: Diabetes Self-Care Competences

There was notable agreement between the quantitative and qualitative studies identified in this integrative review regarding diabetes self-care competencies. The quantitative data indicated that engagement in diabetes self-care was suboptimal (Amankwah-Poku et al., 2020; Devarajooh & Chinna, 2017). People with T2DM face challenges in adhering to physical activity, self-monitoring blood glucose, following a diabetes-specific diet, and foot care. Similarly, the qualitative data provided contextual insights that helped explain the quantitative findings such as experiences of suboptimal social determinants of health as well as the role fatalistic health beliefs which acted as barriers to diabetes self-care (Giarola et al., 2016; Liu et al., 2022; Mwila et al., 2019).

2.18.2 Relationships Among Depression, Diabetes-Related Distress, Self Efficacy, and Diabetes Self-Care

Qualitative and quantitative studies highlighted the impact of T2DM’s comorbidity with depression and diabetes-related distress on diabetes self-care within low- to middle-income countries. Mental health conditions such as depression and diabetes-related distress if left undiagnosed may negatively impact on diabetes self-care. The evidence from the identified quantitative studies (Devarajooh & Chinna, 2017; Gao et al., 2022) were equivocal on the hypothesised that there exists a strong mediating role of self-efficacy on the relationships between depression, diabetes-related distress, and diabetes self-care among people with T2DM.

On the other hand, qualitative findings revealed that the multiple components of T2DM treatment were perceived as a burden leading to people with T2DM experiencing feelings of depressive symptoms or diabetes-related distress, which in turn may lower one's motivation and self-efficacy to engage in diabetes self-care (Gonzalez et al., 2019; Mwila et al., 2019; Vicente et al., 2019). Moreover, participants' views suggested that experiences of emotional distress were felt at various points, such as at the initial diagnosis and during the adjustment stage, as the reality of complications and the chronicity of T2DM pointing to possible changes on emotional distress as people with T2DM learn to accept the diagnosis.

2.18.3 Relationship Among Depression, Diabetes-Related Distress, Social Support, and Self-Care

Qualitative and quantitative studies highlight the important role of social support as a potential facilitator and barrier to diabetes self-care. While most identified quantitative studies (Amankwah-Poku et al.,2020; Sari et al, 2020) reported positive correlational relationships between social support and diabetes self-care, most did not consider the mediating role of social support on the relationships among depression, diabetes-related distress and diabetes self-care limiting the ability to draw meaningful conclusions. However, some authors (Al-Dwaikat et al., 2021; Amankwah-Poku et al., 2020) pointed to possible cultural factors within low- to middle-income countries that influence how people with T2DM may self-report on their experiences of social support. This was further illuminated in some qualitative studies (Mendenhall et al., 2015; Mwila et al., 2019) which provided insights people with T2DM's interaction with some of their social networks' members were reported as positive or negative. Thus, it could be argued that perceived social support may function as enablers and barriers to recommended diabetes self-care within low- to middle-income countries.

2.18.4 Instances of Silence

Three important perspectives, or "silent" themes, emerged from qualitative data sources that were not reflected in the included quantitative studies. These silent themes offer critical insights into the lived experiences of people with T2DM within low- to- middle income countries.

2.18.4.1 Experiences of Suboptimal Social Determinants of Health and Healthcare Navigation Challenges.

The first perspective people with T2DM's experiences with suboptimal social determinants of health and the difficulties of navigating healthcare systems (Mendenhall et al., 2015; Mwila et al., 2019; Vicente et al., 2019). These were described as life stressors largely beyond the control of people living with T2DM, yet they significantly influence experiences of diabetes self-care. People with T2DM illuminated various barriers and enablers to diabetes self-care such as age, gender, income, education, type of employment, distance to healthcare, access to transportation, poverty, access to free medication, access to diabetic specific foods, duration of illness and risk of job loss as crucial within low-income settings.

These reflections point to a broader experience of poverty, lack of access to diabetes care, diabetes-related food insecurity and possible interplay of multiple social identities (age, gender, education, employment) as a key aspect of living with T2DM in low- to middle-income countries. Although certain sociodemographic factors, such as age, gender, socioeconomic status, and employment status, were collected in quantitative studies, they were often considered as confounding variables and thus excluded from the final correlational or mediation analyses. This exclusion in the analytical process restricted their recognition as social determinants of health factors with primary influence on diabetes self-care within low-income settings.

2.18.4.2 Healthcare system

The second silent perspective from the qualitative studies highlighted the role of the healthcare system funding and quality in shaping the lived experiences of diabetes self-care within low- to- middle-income countries. People with T2DM reported having limited access to universal health coverage, which resulted in experiences of catastrophic out-of-pocket expenditures. Furthermore, the quality of diabetes care was perceived as poor, with healthcare professionals often described as unempathetic during clinical visits pointing to potential source of emotional distress. These systemic issues acted as significant barriers to diabetes self-care within low- to middle-income countries. The role of healthcare systems on the lived experience of diabetes self-care was not explored among the identified quantitative studies.

2.18.4.3 Influence of Social Network Members

The third silent perspective discussed the complex role of social networks as part of the social milieu of diabetes self-care (Giarola et al., 2016; Gonzalez et al., 2019; Liu et al., 2022; Mendenhall et al., 2015; Mwila et al., 2019). Social networks for people with T2DM within low- to middle-income countries included family members, children, spouses, friends, neighbours, peer support groups, and healthcare professionals. Interestingly, people with T2DM perceived their interactions with social networks as a source of health-related support such as assistance with meal planning.

However, some of interactions were reported to be a source of emotional distress. Some people with T2DM reported social controlling behaviours, like being pressured to join a gym, or experienced non-involvement and unintentional undermining, such as family members preparing meals unsuitable for diabetes management (Mwila et al., 2019). These complex social network dynamics illustrated the nuanced and sometimes contradictory impact of social support on diabetes self-care which was not captured by the identified quantitative studies.

2.19 Strengths and Limitations of the integrative review

An integrative review was conducted to synthesise evidence from both quantitative and qualitative studies, providing a comprehensive understanding of how psychosocial factors influence diabetes self-care within low- to middle-income countries. According to the Whittemore and Knafl (2005), integrative review methodology adhered to clearly defined inclusion and exclusion criteria thus enhancing its methodological rigour and credibility. The review identified considerable heterogeneity in study populations, geographic contexts, data collection tools and data analysis methods.

The identified quantitative studies predominantly employed correlational approaches, with only six out of the identified sixteen studies utilising advanced statistical analytical methods such as structural equation modelling or bootstrapping to examine the mediating roles of important psychosocial constructs such as self-efficacy and social support on the complex relationships among depression, diabetes-related distress and diabetes self-care.

Consequently, the underlying mechanisms linking social support and self-efficacy to diabetes self-care remain underexplored in much of the existing quantitative literature within low- to middle-income countries. Moreover, key social determinants of health (e.g. age, gender, income, employment status), although often measured, were typically treated as confounders and excluded from final analyses within quantitative studies thereby minimising the impact on diabetes -self-care.

In contrast, the qualitative studies identified in this review captured complex lived experiences and realities of people with T2DM in low- to middle-income countries, including experiences of suboptimal social determinants of health, healthcare access challenges, and often complicated social network influences. Qualitative findings illuminated how perceived social support could act as an enabler and source of emotional distress, depending on cultural context.

Therefore, the qualitative data provided crucial low- to middle-income countries contextual insights, highlighting the limitations of a solely quantitative approach to understanding lived experiences of diabetes self-care. A key limitation of the integrative review was the inclusion of only English-language studies, which may have excluded relevant evidence published in regional or local languages. Nonetheless, the findings point to important research gaps in the current evidence base.

2.20 The Implication of Existing Research and Identifying Potential Gaps

This integrative review has illuminated the intricate interrelationships among depression, diabetes-related distress, self-efficacy, social support, and diabetes self-care in 13 low- to middle-income countries. While the included quantitative studies provided some plausible explanations on the role of social support and self-efficacy as mediating factors on the relationships between depression, diabetes-related distress and diabetes self-care, their findings were often inconclusive due to methodological limitations. Notably, only six qualitative studies were identified, yet these contributed valuable context-specific insights that highlighted the importance of exploring psychosocial aspects of T2DM and diabetes self-self-care in low-income settings.

Thus, it may be argued more qualitative research is needed to generate context-sensitive understandings of psychosocial aspects of T2DM within low- to middle-income countries. Secondly, this integrative review revealed a possible representation gap of key stakeholder perspectives, that they are part of social milieu of diabetes self-care within low- middle-income countries. All the included studies focused mainly self-reported and lived experiences of people with T2DM and did not include perspectives of caregivers, healthcare providers, or peer support leaders which are vital to the nuanced understanding of the psychosocial health-related needs associated with diabetes self-care. Without these viewpoints, critical elements of the care environment and support systems remain unexplored within low- to- middle-income countries.

Thirdly, the identified studies focused on diabetes self-care competencies, often neglecting the role of social determinants of health within low- to middle-income countries were factors such as food insecurity, limited access to transportation, limited access to availability of free medication, and prevailing socio-cultural norms may have significant impact on the lived experience of T2DM. This omission reflects a form of 'lifestyle drift', where people with T2DM’s health behaviours are often targeted for interventions while upstream structural determinants are ignored (Williams & Fullager, 2019).

Finally, there were various theoretical frameworks that underpinned some of the included studies such as Social Cognitive Theory, Self-Determination Theory, and the Health Belief Model which tend to focus on people with T2DM’s agency and motivation to follow recommended diabetes self-care. Thus, it may be argued these theoretical frameworks may not adequately capture the socio-economic and cultural nuances that shape the lived experiences of diabetes self-care in low- to middle-income countries.

Therefore, future research should draw on comprehensive theoretical models that explicitly integrate social determinants of health, enabling a more accurate illustration of how social determinants of health influence lived experiences of diabetes self-care as well as to address possible pervasive health inequalities in diabetes outcomes in low- to middle-income countries.

2.21 Conclusion

This chapter examined the role of psychosocial factors such as depression, diabetes-related distress, self-efficacy, and social support as potential barriers and enablers of diabetes self-care within low- to middle-income countries. This integrative review highlighted the paucity on T2DM diabetes psychosocial aspects within sub-Sahara Africa region, including Zimbabwe where the burden of T2DM and comorbidity with depression and diabetes-related distress continues to rise. Notably only two qualitative studies identified in this review were conducted in South Africa and Zambia, with no studies identified from Zimbabwe. This pointed to limited cultural and contextual insights on psychosocial aspects of T2DM highlighting the need for more exploratory qualitative study in Zimbabwe. The identified methodological, theoretical, contextual, and geographical research gaps informed the rationale for this PhD study as delineated in Chapter 3.

Chapter 3: Methodology

3.1 Chapter Overview

This chapter details the research plan for a qualitative intrinsic case study that was used to explore psychosocial health-related needs of people with T2DM in Zimbabwe. It covered the methodology, philosophical underpinning, study's theoretical framework research design, ethical considerations, participant recruitment and sampling strategy, data collection, data management, data analysis, researcher positionality as well as reflexivity, adopted quality assurance measures and conclusion.

3.2 Research Aim and Objectives

This intrinsic case study explored the perceived psychosocial health-related needs of people with T2DM in Zimbabwe from the perspective of those with lived experience (people with T2DM, caregivers, diabetes advocates/peer support leaders) and those with professional experience (diabetes healthcare professionals) of T2DM.

The study objectives were:

1. To explore the lived experience of diabetes self-care among people aged 18–64 with T2DM in Zimbabwe.
2. To explore how psychosocial health-related needs are experienced by people with T2DM aged 18-64 in Zimbabwe from the multiple perspectives (i.e. people with T2DM, self-identified caregivers, self-identified unpaid diabetes advocates and diabetes healthcare providers).
3. To illuminate how these psychosocial health-related needs influence diabetes self-care in Zimbabwe.

3.3 Research Questions

This intrinsic case study aimed to address the following research questions:

1. How do people aged 18–64 years living with T2DM in Zimbabwe describe their lived experience of diabetes self-care?
2. How can the views and perspectives of people with T2DM, self-identified caregivers, self-identified unpaid diabetes advocates and diabetes healthcare professionals contribute to exploring the psychosocial health-related needs of people with T2DM in Zimbabwe?

3.4 Research Philosophical Worldviews

The study was guided by an interpretivist–constructivist worldview linked to qualitative research (Braun & Clarke, 2013). It addressed questions of reality ontological assumptions), meaningful knowledge generation (epistemological assumption), and the researcher's value system (axiology) (Adu, 2019; Creswell & Creswell, 2017). The study relied on the perspectives of individuals with lived and professional experience of T2DM in Zimbabwe, recognising that their subjective experiences are varied, complex, and context-dependent (Creswell & Creswell, 2017). The researcher acted as a data collection instrument during semi-structured in-depth interviews and focus group discussions (Crotty, 1998). However, as argued by Braun and Clarke (2022), the researcher’s subjectivity, experiences, social identities, and interpretations meant they were not a neutral conduit. Consequently, strategies such as using a reflexive diary were employed to document the researcher’s thoughts, feelings, interpretations and behaviours at each research stage (Goulder, 2025).

3.5 Qualitative Methodologies

Psychosocial aspects of T2DM, including their impact on diabetes self-care practices, have largely been studied using quantitative research methods (Polonsky et al., 2016). However, this approach has often been criticised for medicalising diabetes self-care while neglecting importance of contextual factors (Walker et al., 2021) and the preferences of people with T2DM (Litterbach et al., 2020). To address these potential issues the use of qualitative, theoretically informed design is well suited as it enables an in-depth exploration of the nuanced dimensions of the phenomenon through participants lived experiences and subjective interpretations within their specific socioeconomic and cultural context (Creswell & Creswell, 2017).

According to Creswell's (2013) typology, there are six common types of qualitative methodologies, including narrative, phenomenology, grounded theory, ethnography, participatory action research, and case studies. Considerations regarding the suitability of other qualitative methodologies, such as grounded theory and phenomenology, were made (Denzin & Lincoln, 2018). Grounded theory, developed by Glaser and Strauss (2017) and expanded by Charmaz (2015) from a constructivist perspective, aims to generate theories about social phenomena, making it ideal for explaining processes rather than verifying existing theories (Adu, 2019; Creswell & Creswell, 2017).

In contrast phenomenology focuses on understanding the meaning, structure, and essence of participants lived experiences (Kafle, 2011; Laverty, 2003), answering questions about lived experiences from a small homogeneous group to develop patterns and relationships of meaning (Creswell, 2013). While grounded theory and phenomenology may provide robust approaches for comprehending social processes and lived experiences, this research's aim was to explore the lived experience of diabetes self-care in a specific, real-world context so as illuminate psychosocial health-related needs.

Accordingly, the case study methodology, which emphasises exploring phenomena in their natural environment, was deemed aligned to the study's aim and objectives. An intrinsic case study design was selected because the case itself highlights the psychosocial health-related needs of people living with T2DM within Zimbabwe's distinctive and evolving socioeconomic and cultural environment which warrants in-depth exploration. This approach is appropriate when the researcher seeks to understand a case in its own right rather than to generalise or build theory (Stake, 1995; Patton, 2014, p. 115).

3.5.1 Qualitative Case Study

A qualitative case study is a research methodology that involves an in-depth examination of single or multiple cases in their natural context (Baxter & Jack, 2008; Hancock et al., 2021). Moreover, the qualitative case study approach is useful in exploring intricate issues where the distinctions between the phenomenon and its context are not well defined (Yin, 2018). The case study methodology is useful in answering the ‘how’ questions proposed in this research as well as bringing to attention to local situations when research data is scarce (Baskarada et al., 2014).

The literature on case study as a methodology is influenced by the work key proponents such as Eisenhardt (1989a), Merriam (1998), Stake (1995), and Yin (2018). The approaches of Eisenhardt (1988) and Yin (2018) tend to align with the post-positivist worldview, while Merriam (1998) and Stake (1995) are aligned with interpretative-constructivist worldviews (Creswell et al., 2007; Mishra & Dey, 2021). However, Merriam’s typology for qualitative case studies is derived from the work of Stake (Mishra & Dey, 2021; Yazan, 2015).

3.5.2 Stake (1995)’s Typology of Qualitative Case Studies

According to Stake (1995) ‘there are three types of qualitative case studies including “intrinsic”, “instrumental” and “collective”.’ Moreover, as per Stake's typology (1995, p. 64), ‘an intrinsic case study focuses on the inherent interest of the case itself, aiming to understand the phenomenon within its context and in-depth. The goal of an intrinsic case study is to explore the complexities and unique features of the case, rather than to test a theory or hypothesis’ (Schoch, 2020). On the other hand, an instrumental case study ‘is selected by a researcher who aims to gain insights into a specific issue, with the case chosen to explore and provide data on the phenomena under investigation. Lastly, Stake's (1995) framework defines a collective case study as examining multiple cases simultaneously or sequentially to illuminate commonalities, differences and patterns across cases so as to gain deeper understanding of the phenomenon under study.

Consequently, as the aim of this study was to explore the lived experience of diabetes self-care in Zimbabwe to illuminate the psychosocial health-related needs of people with T2DM. An intrinsic case study was chosen because its use enabled a holistic, context-sensitive examination of complex psychosocial health-related needs grounded in participants lived experiences, consistent with an interpretivist qualitative paradigm in a specific real-life context such as Zimbabwe (Stake, 1995; Yin, 2018).

3.6 Theoretical Framework

A theoretical framework serves as a guide for research, aiding in the interpretation of findings and the development of conclusions (Varpio et al., 2020). As described in Chapter 2, possible theoretical gaps were identified regarding theories used in the identified studies that focus on people with T2DM's agency and motivation to follow diabetes self-care recommendations without considering the possible impact of intersection of social determinants of health, people with T2DM multiple social identities and psychosocial factors on the lived of diabetes self-care.

In line with reflexive thematic analysis (Braun et al., 2019), this study adopted an interpretivist-constructivist approach, utilising the theoretical framework as an interpretative tool. Initial reflections of participants' narratives during data analysis revealed that the lived experiences of diabetes self-care among people with T2DM in Zimbabwe were significantly shaped by social determinants of health, the co-occurrence of T2DM with mental health conditions, and the intersection of various social identities, including socioeconomic status, gender, employment, and marital status.

As a result, the Socio-Ecological Model and the Intersectionality Approach were chosen for the study's theoretical frameworks. These frameworks align with the study's epistemological stance by recognising that lived experiences of diabetes self-care are subjective and embedded within specific socio-economic and cultural contexts. Furthermore, these experiences may be influenced by the dynamic interplay of multiple levels of influence and intersecting social identities within systems of power in Zimbabwe.

3.6.1 Socio-Ecological Model

Bronfenbrenner's socio-ecological framework (1994) as adapted by McLeroy and colleagues in 1988 for health-related behavioural changes, consists of different layers of influence depicted in the model's ecologically nested systems (Farnoudi et al., 2022; Golden & Wendel, 2020). The Socio-Ecological Model (SEM) is widely used in public health and diabetes-related research (Caperon et al., 2019; Farnoudi et al., 2022; Usman & Pamungkas, 2018), making it suitable for exploring the lived experience of diabetes self-care while illuminating the psychosocial aspects of T2DM at multiple level of influence as depicted in Figure 3 below.

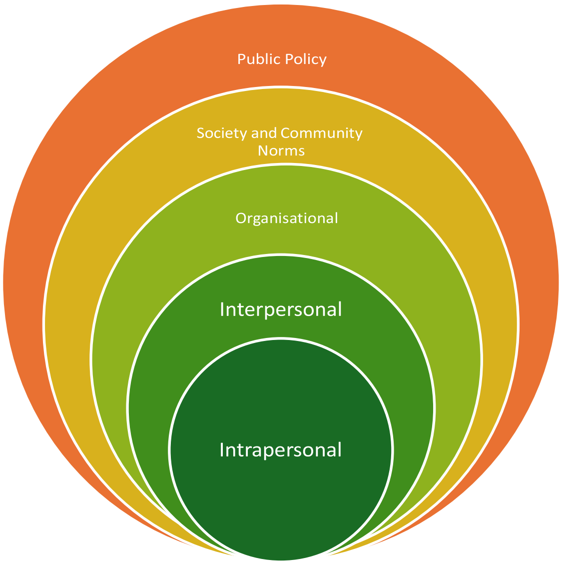

Figure 4. Socio- Ecological Model of Health

3.6.1.1 Intrapersonal Level

The level of the Socio-Ecological Model represents people with T2DM's inherent characteristic such as demographic factors, health literacy, diabetes knowledge, attitudes, health beliefs, illness perceptions, health personality traits, stress and coping style, perceived self-efficacy, health-seeking behaviours that may influence their ability to follow the recommended diabetes self-care practices within low-income settings (Addo et al., 2024; Efendi et al., 2024; Yasmin et al., 2025).

3.6.1.2 Interpersonal Level

This level of Socio-Ecological Model represents formal and informal social networks including perceived support that may influence people with T2DM's capacity to engage in the recommended diabetes self-care activities. Both people with T2DM's social ties and perceived social support constitutes critical psychosocial factors for diabetes self-care globally (Al-Dwaikat et al., 2021; Jonasson et al., 2020). For example, within the sub-Sahara Africa, the study of Onyango and colleagues (2022) reported that perceived family support was significantly correlated with diabetes self-care in Uganda. The dynamics within the social support network, characterised by the ties and perceived quality of relationships with individuals involved in a person's with T2DM diabetes self-care, may facilitate diabetes management (Letta et al., 2021). However, these dynamics can positively or negatively affect people with T2DM self-care capabilities (Masaic et al., 2012; Newton-John et al., 2017).

3.6.1.3 Organisational Level

This level of the Socio-Ecological Model outlines key components of the healthcare system within a context including type of service providers, healthcare delivery models, healthcare regulatory as well as healthcare financial funding. People with T2DM reportedly use healthcare services more often than those without diabetes (Khalid & Serieux, 2018). However, people with T2DM form a heterogeneous group with varied medical and psychosocial needs (Kulzer et al., 2021). While the American Diabetes Association (2018) promotes a 'patient-centred care' model that respects people with T2DM's preferences and which has been associated with better diabetes outcomes (Chen et al., 2024; Rutten et al., 2020), the implementation of this model within low-income settings such as Zimbabwe remains largely aspirational (Agyepong et al., 2017; Kodam et al.,2024; Zezai et al., 2024). Therefore, exploring the current healthcare system and contextual factors is essential for identifying enablers and barriers to the provision of psychosocial care for people with T2DM in Zimbabwe (Motala et al., 2022).

3.6.1.4 Societal and Community Level

This level of the Socio-Ecological Model describes the broader social-economic context as well how existing culture and social norms including gender roles, caregiving expectations, health beliefs as well as illness perceptions which may influence diabetes self-care within a context. For example, Suglo and Evans (2020) reported that people with T2DM in some African countries often attribute the diagnosis of T2DM to ‘God’s will’ or witchcraft due illness perceptions and cultural beliefs. Additionally, some people with T2DM may prefer traditional non-biomedical treatments such as ‘holy water’ and herbs (Molla et al.,2025; Mogre et al.,2019).

Conversely, social gathering obligations pose challenges for people with T2DM, making adherence to dietary advice difficult (Vanstone et al., 2017). Community gathering have been reported to be associated with experiences diabetes-related stigma, particularly diabetes self-care activities such as blood glucose monitoring, dietary restrictions and insulin injections occur around the often uninformed and judgemental community members (Browne et al., 2013; Guo et al., 2023). Thus, existing societal expectations may act as barriers or enablers to diabetes self-care, necessitating further investigation into their impact in a context.

3.6.1.5 Public Policy Level

This level of the Socio-Ecological Model focuses on the macroeconomic and health-related policies within a country that influence diabetes self-care. These upstream factors including multisectoral policies on employment, healthcare financing and regulation, social welfare access, education, and agricultural have been reported to influence the lived experience of people with T2DM (Egede et al., 2023; Hill-Briggs et al., 2022; Levy et al., 2022). For instance, studies from the United States of America highlighted how the implementation of the Affordable Care Act (2010), a national healthcare financing policy, reduced barriers to diabetes care access and improved diabetes self-care and outcomes (Allen et al., 2022; Pihoker et al., 2023).

Conversely, the absence of coherent agricultural policies has been reported to be linked to food insecurity which is defined as “the lack of consistent access to enough food for an active, healthy life” (United States Department of Agriculture, 2024). Diabetes-related food insecurity has been shown to contribute to poorer diabetes self-care behaviours and adverse clinical outcomes among people living with T2DM (Gucciardi et al., 2014). Similarly, a recent systematic review from sub-Saharan Africa (Nkambule et al., 2024) identified food security as a critical social determinant of health, highlighting its significant influence on across diverse contexts. These findings highlight the importance of understanding how policies across multiple sectors such as economic, health, agriculture, education, and social welfare intersect to shape the lived experience of diabetes self-care. This intersection is particularly pertinent in low-income settings such as Zimbabwe, where structural and socioeconomic constraints underpin the lived experiences of T2DM.

3.7 Intersectionality Framework

The Intersectionality Framework (Crenshaw, 1989; Hankivsky, 2014) was used to explore how multiple social factors such as age, gender, socio-economic status, employment status, marital status, and access to medical insurance interact to shape the lived experience of diabetes self-care among people with T2DM. This framework enabled an exploration of how these overlapping social identities and structural positions converge to produce differentiated experiences, constraints, and opportunities in diabetes self-care in Zimbabwe.

Moreover, these intersecting social identities may interact with wider social determinants of health including mechanisms of power leading to differential experiences of privilege and oppression that contribute to health inequalities (Heard et al., 2020; MacGregor et al., 2023). By employing a qualitative methodology, this study aligns with McCall’s (2005) intracategorical intersectionality approach, which focuses on exploring the complexity and heterogeneity within study to understand how intersecting dimensions of social identity and social determinants of health may influence the lived experience of diabetes self-care in Zimbabwe.

This study used the combined Sociological Ecological Model and the Intersectionality Framework as an interpretative theoretical framework was, they complement one another by enabling multilevel and a power-sensitive analysis of diabetes self-care. Therefore, combining the two frameworks allowed for a more nuanced exploration of how social determinants, psychosocial factors, and intersecting identities operate within Zimbabwe's unique socio-economic and healthcare context, thereby providing a comprehensive foundation for interpreting the psychosocial health-related needs of people with T2DM.

3.8 Ethical Considerations

Ethical approval was obtained from Lancaster University (see Appendices: 6 and 7) and the Medical Research Council of Zimbabwe (see Appendix 8). The research protocol adhered to key ethical principles, including obtaining and documenting informed consent, avoiding harm, ensuring benefits outweigh risks, upholding participants' right to withdraw, addressing power imbalances, ensuring clarity on data ownership, and maintaining confidentiality and anonymity (Surmiak et al., 2022; Zhang et al., 2024).

3.8.1 Obtaining Informed Consent

Informed consent is a cornerstone of research ethics, ensuring that participants voluntarily enrol in research studies after fully understanding the risks (Xu et al., 2020). The process involved several steps:

Participants received a 'Participant Information Sheet' (Appendix 12) and had at least two weeks to review and discuss its contents with family, friends, or advisers before enrolling.

The principal investigator verified participants' eligibility and explained the study's aims, procedures, risks, benefits, and alternatives in person or by phone, allowing participants to ask questions or express concerns before enrolment (Appendix 13).

The researcher checked participants' understanding by paraphrasing information and using open-ended questions, ensuring participants explicitly agreed to each term before proceeding.

Informed consent was documented in writing during face-to-face meetings, orally over the phone (recorded securely), or via e-consent using a secure email linked to the Qualtrics survey tool licensed to Lancaster University (Appendices 14,15,16).

3.8.2 Potential Risk to Participants and Time Limit for Withdrawal

The use of in-depth interviews and focus group discussions may cause distress, especially during discussions of sensitive issues. While it is possible to assess psychological distress during face-to-face interviews, it is more challenging to do so in telephone or online formats (Eynon et al., 2016).

Consequently, to mitigate potential harm:

1. Participants were given an easy-read guide explaining how to withdraw before or during online, telephone, or face-to-face interviews, and up to two weeks after their in-depth semi-structured interview (Appendices 14,15).
2. Focus group discussion participants signed additional confidentiality agreements, acknowledging their rights and limitations regarding withdrawal (Appendix 16).
3. Participant well-being was checked as part of the debriefing process after the in-depth interviews and (Appendices 18, 19, 20, 21).
4. Participants were directed to relevant support organisations, as outlined in the Participant Information Sheets (Appendix 12).

3.8.3 Anonymity and Confidentiality

Researchers must ensure participants' anonymity and confidentiality during data collection. Anonymity involves not revealing participants' identities, opinions, or views, while confidentiality means not disclosing research data to third parties (Subedi, 2025).

3.8.3.1 Steps to ensure anonymity during this study.

To ensure participant anonymity as well as to maintain adherence to the confidentiality and data-protection standards outlined in the study’s ethical protocol (Archibald et al., 2019; Lobe et al., 2020), all study participants were assigned unique identifiers reflecting their role: “pseudonym, person with T2DM” for people with T2DM, “pseudonym, caregiver” for caregivers, “pseudonym, diabetes advocate” for diabetes advocates, and “pseudonym, diabetes nurse” for healthcare professionals which were applied consistently across all study instruments. For data collected via online platforms, including Zoom, WhatsApp, and Microsoft Teams, participants were required to keep their cameras off and use their assigned pseudonyms, as the study focused on textual data rather than visual content.

3.8.3.2 Steps to Ensure Confidentiality

Each study participant was assigned a unique identifier and pseudonym, which were linked to consent forms, questionnaires, audio recordings, in-depth interviews or focus group discussions transcripts. The list connecting participants' names to their possible identifiers was securely stored in a locked cabinet by the principal investigator. Confidential data were not disclosed to third parties without participant consent However, due to the group setting of focus group discussions, absolute confidentiality could not be guaranteed.

Each focus group discussion participant was required to sign a statement agreeing to respect the privacy of others and refrain from disclosing discussion content (Appendices 19, 20, 21). However, participants were informed that confidentiality could be limited in certain circumstances, such as if the researcher became legally obligated to report any disclosure of harm to themselves or others. These exceptions were clearly explained as part of the informed consent process.

Moreover, semi-structured in-depth interviews and focus group discussions were recorded using an encrypted, password-protected digital voice recorder. Audio files in Shona were first translated into English to facilitate data analysis, and all files were subsequently anonymised and transcribed (Saunders et al., 2015). Given the large volume of data and the need for accurate translation, a professional translation service was employed, which signed a legally binding confidentiality agreement to ensure the protection of participants' information (Appendix 22).

3.8.4. Data Management Research and Dissemination.

Research data were managed in compliance with the UK Data Protection Act (2018). Following each semi-structured in-depth interview and focus group discussion, the principal investigator uploaded audio files, signed informed consent forms, completed socio-demographic forms, anonymised recordings, and transcripts to Lancaster University's secure, password-protected, encrypted Microsoft OneDrive. These files will be retained until the thesis examination. Following completion of the PhD, both the research data and thesis will be archived in Lancaster University's Pure research repository and stored for up to ten years. The results of this thesis have been, or will be, disseminated through professional conferences (Appendix 24), online podcasts and publication in peer-reviewed journals. Additionally, copies of the study findings will be submitted to key stakeholders in Zimbabwe.

3.9 Study Participants

The following participants were recruited for this study:

1. People living with a diagnosis of T2DM for at least one year, aged between 18–64 years, who reside in Zimbabwe.
2. People who self-identified as caregivers and peer support leaders involved in the diabetes self-care of people with T2DM, aged ≥18 years, who reside in Zimbabwe.
3. Diabetes healthcare professionals aged ≥18 years with experience working with people with T2DM in Zimbabwe.

The following are delimitation of this study:

1. **Geography Scope:** The study was limited to only participants living in Zimbabwe during the data collection of phases of this research.
2. **Age range**: Individuals aged **18–64 years** with a confirmed diagnosis of T2DM were eligible for inclusion. Participants aged **≤18 years** and **≥65**

years were excluded in accordance with the Medical Research Council of Zimbabwe ethical requirements, which outline additional protections for minors and older adults. These age-related exclusions were implemented to minimise additional ethical considerations and ensure that all participants were able to provide independent informed consent.

3. **Time since diagnosis**: People with T2DM for at least one year were enrolled into the study excluding those people at adjustment stage following a diagnosis with T2DM.
4. **Diagnosis verification and clinical screening**: To align with the study's qualitative methodology as a way to capture the lived participants narratives, no clinical screening was performed for depression or diabetes-related distress, and enrolled participants had self-reported the T2DM diagnoses.
5. **Self-identification criteria**: Caregivers and peer support leaders were included based on self-identification without further verification.
6. **Professional role**: Healthcare professionals included in the study were those with experience working in diabetes services in Zimbabwe. The study did not include policymakers or health care administrators, whose perspectives may differ.

3.9.1 Recruitment Strategy

Following with Government of Zimbabwe public health regulations and research guidance from Lancaster University during the COVID-19 pandemic, a remote and community-supported recruitment strategy was adopted. This multi-modal recruitment strategy enabled wide geographical reach while ensuring ethical safeguards, voluntary participation, and transparency throughout the recruitment process.

3.9.1.1 Identification of Potential Participants

Study participants were identified through two main routes:

1.**Public advertisement**- Study posters and digital flyers were developed in English, Shona, and Ndebele (Appendices 9, 10, 11) to maximise accessibility. These were:

- Posted on the Principal Investigator's social media platforms (Facebook, X/Twitter).
- Shared in diabetes community-related and general communities WhatsApp groups.
- Displayed at selected primary healthcare centres, private health care centres, pharmacies, and community centres in Harare and Chitungwiza.

2.**Gatekeeper-facilitated dissemination and their role.**

A gatekeeper (a person living with Type 1 diabetes mellitus) and recognised global diabetes advocate in Zimbabwe was approached due to their established presence within diabetes support networks. The gatekeeper's role was strictly limited to study information dissemination, specifically, the gatekeeper:

- Shared the approved study advertisement within diabetes-related groups and networks.
- Encouraged interested people to contact the Principal Investigator directly.
- Had no access to participant data and was not involved in the consent process.
- This approach ensured that participation in the research study remained entirely voluntary while minimising any perceived coercion, in line with ethical guidance on gatekeeper involvement (Surmiak et al., 2022).

3.9.1.2 Recruitment and Enrolment Process

The recruitment process followed these steps:

1. Interested participants contacted the Principal Investigator directly via email, WhatsApp, or telephone using the details provided on the advertisement.
2. The Principal Investigator provided a Participant Information Sheet (Appendix 12) explaining the study aims, procedures, risks, benefits, and confidentiality measures.
3. Eligibility screening (Appendix 13) was conducted using predefined inclusion and exclusion criteria.
4. Eligible participants were given two to four weeks to consider enrolment and discuss participation with their loved ones and healthcare providers; late expressions of interest were accepted if within project timelines.
5. Written, oral or electronic informed consent was obtained prior to data collection (Appendices 14, 15, 16).
6. Interview and focus group discussion dates were then scheduled at a mutually convenient time.

3.9.2 Sampling Strategy

For this intrinsic case study, people in Zimbabwe with lived and professional experiences of T2DM were recruited, exemplifying a case-sampling approach (Schoch, 2020). Two strategies were employed included purposive and snowball sampling. Purposive sampling involved the deliberate selection of participants likely to provide detailed, comprehensive descriptions the lived experiences of diabetes self-care as well as perceived psychosocial health-related needs of people with T2DM in Zimbabwe (Moser & Korstjens, 2018). Also, the snowball sampling method asked participants to invite others to join the study. This helped explore the main topic in detail (Moser & Korstjens, 2018).

3.9.3 Sampling Size

Intrinsic case studies typically use small sample sizes (Schoch 2020). While some literature suggests that qualitative study sample adequacy should be based on “saturation” (Buckley, 2020; Moser & Korstjens, 2018; Saunders et al., 2018), which refers to the point when no new themes or insights are generated during analysis recent perspectives critique this recommendation (Braun & Clarke, 2021, Sims et al., 2018a). Therefore, sample adequacy for this study’s semi-structured in-depth interviews and focus group discussions were based on practical considerations, while recognising that fewer participants might be sufficient due to multiple data sources (Malterud et al., 2021).

Thus, data collection was discontinued after researcher reflections and considerations whether the posed research questions were answered after analysis of the available dataset meaning the adequacy decisions are subjective and were only determined after analysis (Braun & Clarke, 2021b). Additionally, Braun and Clarke (2013) suggest that 10 to 20 participants are a sufficient sample size for a qualitative, medium-sized study. Consequently, 16 people with T2DM participated in the semi-structured in-depth interviews, and three FGDs were held with various participant groups, each comprising four to six participants.

3.9.4 Data Collection

This qualitative intrinsic case study methodology employed diverse methods to gather data (Roller & Lavrakas, 2015, pp. 288–289). Semi-structured in-depth interview documented the perspectives of people with diabetes on self-care practices in Zimbabwe, using open-ended questions and probes (Appendix 18) to seek clarifications and explore spontaneous issues raised by the participants (Eppich et al., 2019). Concurrently, focus group discussions with caregivers, advocates, and healthcare professionals (Appendices 19, 20, 21) captured several viewpoints on diabetes self-care practices, including psychosocial barriers and facilitators in Zimbabwe, based on the interactions of four to six participants in each group using open-ended questions and probes (Barbour & Barbour, 2018; Kitzinger, 2013; Polit & Beck, 2014).

Most in-depth interview were conducted in Shona and translated into English for analysis, while all focus group discussions were conducted in English based on the participants' language preferences. None of the in-depth interview were conducted in Ndebele, negating the use of an interpreter. English was accepted as the target language, meaning the language in which participants' views, experiences, and perspectives on the posed questions were reported (Baumgartner, 2012; Temple & Young, 2004).

In this study, the following data collection tools were used:

1. Eligibility Screening Questionnaire (Appendix 13).
2. Social demographic factor questionnaire (Appendix 17).
3. In-depth semi-structured interview topic guide (Appendix 18).
4. Focus group discussion topic guide with health care professionals (Appendix 19).
5. Focus group discussion topic guide with caregivers (Appendix 20).
6. Focus group discussion topic guide with diabetes advocates (Appendix 21).
7. Researcher reflective diary (Appendix 23).
8. Audio recordings and transcripts of semi-structured in-depth interviews.
9. Audio recordings and focus group transcripts of focus groups discussions.

3.9.5 Impact of COVID-19 Pandemic on Data Collection

Participants were asked to choose their preferred interview mode among telephone, face-to-face, Zoom, or Microsoft Teams (Conlon et al.2023, Tremblay et al., 2021; Tiersma et al., 2022). Utilising multiple data collection modes allowed research to continue during the Covid-19 pandemic, though specific advantages and disadvantages of using each data collection with Zimbabwe require consideration. Most of the in-depth interviews were conducted over the phone, with only three occurring face-to-face. Meanwhile, the two focus group discussions were held via Zoom, and one was conducted using a telephone conference facility. Telephone in-depth interviews ranged from 21 to 55 minutes; face-to-face in-depth interviews spanned 28 to 56 minutes and focus group discussions lasted between 45 and 65 minutes.

All in-depth interviews and focus group discussions audio-recorded using an Olympus WS-852 after obtaining participant consent, as this approach facilitates capturing conversations without interruptions and simplifies the transition to data transcription and analysis (Tesser, 2012; Rutakunwa et al., 2019). The use of different communication methods during data collection was beneficial. Face-to-face, telephone, and online interviews enabled access to people across Zimbabwe's ten provinces (Tuttas, 2015). Phone and online methods made data collection faster and more convenient (Block & Erskine, 2012). Following COVID-19 rules, remote tools like phone, Zoom, and Microsoft Teams protected participants with T2DM and the researcher (Canlon et al., 2021 Varma et al., 2021).

Nonetheless reliance on telephone and web platforms may have excluded potential participants due to inequalities in access (International Telecommunication Report, 2020). While remote research data collection faces challenges including inability of the researcher to interpret non-verbal cues, possible connectivity disruptions, and ethical considerations, which can impact data quality (Archibald et al., 2019; Carter et la., 2025; Thomas Dotti et al., 2024). Despite limitations, using multiple collection methods enabled inclusion of participants from all ten Zimbabwe provinces, enhancing research inclusivity and participant diversity.

3.10 Data Analysis

The data analysis phase of an intrinsic case study is currently poorly defined in the literature (Houghton et al., 2015). However, a rigorous strategy is essential due to the extensive data sources in case studies. Following qualitative methodology recommendations, data analysis proceeded concurrently with data collection in an iterative manner, with initial findings refining questions for subsequent in-depth interviews and focus group discussions.

In-depth interview and focus group discussion transcripts were verified for accuracy by listening attentively to each audio. Transcripts were then transcribed verbatim, correcting only spelling errors, and anonymised to remove participant’s identifiable information (Braun & Clarke, 2013).

This process facilitated data immersion. While there is no recommended universal data analysis approach for intrinsic case, some researchers (Houghton et al., 2015) adopted Miles and colleagues (2019) approach. On the other hand (Stake, 1995) suggested data analysis strategies that use ‘categorical aggregation and direct interpretation’ which is aligned with an inductive, data-driven approach (Adu, 2019; Silverman, 2022).

Consequently, the Reflexive Thematic Analysis described by Braun and Clarke (2006, 2021), was selected for this study due to its capacity to generate insights into research questions within the case study context (Schoch, 2020). Reflexive Thematic Analysis is a well-established qualitative analysis method providing systematic guidance through six iterative phases (Braun & Clarke, 2022). Its flexibility is advantageous as it supports an interpretivist stance while not being restricted to specific methodologies. This makes it suitable for studies emphasizing researcher reflexivity, subjective meaning-making and interpretations.

Furthermore, Reflexive Thematic Analysis facilitates identifying semantic (explicit) and latent (underlying) meanings in participants' narratives, essential for capturing lived experiences of diabetes self-care in Zimbabwe as well as the perceived psychosocial health-related needs (Braun and Clarke 2019; Braun et al., 2019). Data analysis was performed using six stages of reflexive thematic analysis: familiarisation, coding, generating initial themes, developing and reviewing themes, and refining, defining, and naming themes systematically, as depicted in the figure below.

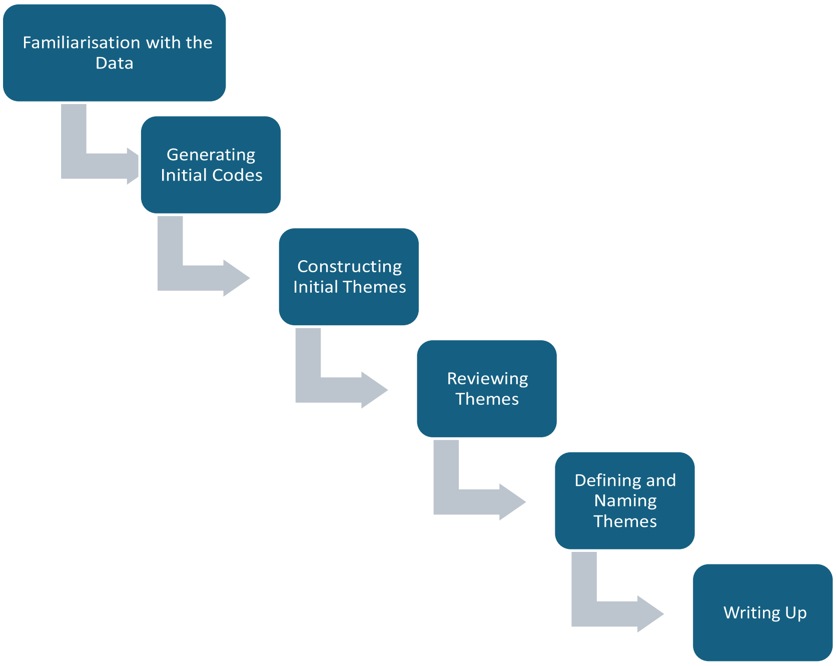

Figure 5. Flow Diagram Illustrating the Six Phases of Reflective Thematic Analysis

Adapted From Braun & Clarke (2019; 2021).

During data familiarisation, immersion occurred while translating research data from Shona to English and checking verbatim transcripts against audio recordings. Once English transcripts for in-depth interviews and focus group discussions were available, the researcher manually coded them and documented reflections on each interview to capture overall data impressions. Subsequently, the initially coded verbatim transcripts were uploaded to NVivo 12 Plus software (QSR International Pty. Ltd., 2018), which facilitates the completion of the remaining five stages of Reflexive Thematic Analysis (RTA) in an iterative manner.

Furthermore, NVivo software enabled a seamless and transparent data analysis process by generating initial codes, categorizing, and visualizing results. In vivo coding (Saldana, 2016) facilitates analytical labelling of meaningful codes (Adu, 2019; Braun & Clarke, 2022), while thematic maps (Braun & amp; Clarke, 2022) provide visual representations of codes, themes, and subthemes systematically, enhancing rigor.

This process allowed for the generation of initial themes, theme reviewing, and the defining and labelling of identified themes (Bazeley & Jackson, 2014). In-depth interview's themes addressed Research Question 1, while themes from the in-depth interviews and focus group discussion addressed Research Question 2. The themes and participant's verbatim quotations contributed to generating a comprehensive narrative (Creswell et al., 2007. p. 27).

3.10.1 Data Triangulation

An intrinsic case study is beneficial for qualitative research when exploring complex phenomena, such as diabetes self-care practices in resource-limited Zimbabwe. Data for intrinsic case studies maybe collected through semi-structured in-depth interviews, document reviews, and focus group discussions (Mishra, 2021), capturing diverse perspectives.

As suggested by Flick (2018, p. 525), a data triangulation protocol enhanced the credibility and richness of findings, while Stakes (1995, p. 107-114), further emphases that data triangulation within an intrinsic case study facilitates deeper analysis through multiple perspectives. Thus, the nuances of perceived psychosocial health-related needs of individuals with T2DM, derived from narratives of those with lived and professional experiences within Zimbabwe's socioeconomic and cultural realities, were triangulated (Vogl et al., 2019).

Data triangulation may result in four outcomes: convergence/agreement, complementarity/partial agreement, dissonance/disagreement, or silence (Vogl et al., 2024). In this study, convergence occurred when insights from individuals with lived and professional experiences of T2DM in Zimbabwe enhanced understanding of a theme (Vogel et al., 2019). Complementary outcome emerged when the perspectives of the different study participant groups extended and reinforced one another, thereby contributing to a more comprehensive understanding of the phenomenon. On the other hand, dissonance outcome was observed when views on the phenomenon of interest diverged among participant groups, indicating need for further exploration. Silence outcome was noted when a theme or sub-theme as unique to one group and not reflected by others study group insights. Thus, these crucial differences in data triangulation outcomes were presented in the results section as a crucial element of case reporting (Schoch, 2020).

3.11 Researcher Reflexivity

Reflexivity in qualitative research entails recognising how social identities, cultural backgrounds, beliefs, interpretations, and experiences shape perspectives, enabling researchers to transparently present participants' views (Braun et al., 2019; Goundar, 2025; Olmos-Vega et al., 2023).

As a 48-year-old Black Zimbabwean woman with a master’s in public health from the University of London and a BSc in Medical Laboratory Sciences from the University of Zimbabwe, I worked at a central hospital in Harare before moving to the UK in 2005. During data collection, I noticed significant changes in healthcare delivery, which led me to reflect on my ‘insider-outsider’ role and my situational identity as a middle-aged, educated, female diaspora-based researcher affiliated with a Western university (Mohler et al., 2022).

Although I consider myself an insider due to my knowledge of Zimbabwe’s healthcare system, annual visits to see family, and self-identification as Zimbabwean, my current identity may position me as an outsider (Zimbabwe-British). As a researcher with insider and outsider perspectives, I recognised the benefits and challenges of my unique position (Goundar, 2025). Understanding Zimbabwe’s cultural and social context helped build rapport and trust with participants, especially when communicating in English and Shona. Addressing participants as ‘aunty’ or ‘uncle’ demonstrated respect and indicated a partially overlapping identity with them (Crossley et al., 2016).

However, this dual role posed challenges when discussing sensitive topics regarding the impact of living with T2DM on sexual health with male participants, where I was unable to explore the nuances in more detail, as existing cultural norms and taboos influence how sexual issues are discussed in the Zimbabwean context (McDonald & Crandall, 2015).

As a female researcher, I also felt uneasy delving deeply into the same issues with some female participants, who occasionally became emotional while recounting their experiences but regained composure to complete the interview. A debriefing process was implemented, and all participants were directed to relevant support groups (Appendix 12). In addition, I carefully documented my emotional reactions, methodological challenges, and ethical considerations encountered during data collection, especially concerning sensitive issues (Appendix 23). I also sought support and guidance from my supervisors (McMahon et al., 2018).

3.12 Quality Assurance

Quality assurance measures were implemented to ensure the research rigor and credibility (Tracy, 2010). Firstly, a reflexive diary (Appendix 23) was used to record my thoughts, assumptions, feelings, and evolving interpretations, thereby ensuring continuous self-awareness and transparency throughout the research process (Peddle, 2021). Secondly the study protocol was adhered to, to maintain its integrity. Thirdly data were collected from diverse participant groups (lived and professional experience of T2DM) using multiple data collection instruments (questionnaires, in-depth interviews and focus group discussions) part of methodological and perspective triangulation.

In-depth interviews and focus group discussions were conducted in a respectful manner which encouraged the open sharing of experiences while adhering to societal and cultural norms. For example, participants could choose their preferred language for interviews, and the researcher used terms like 'aunty' or 'uncle' as a respectful form of address for elders, in line with Zimbabwean customs. The researcher also implemented a debriefing process to assess any emotional distress and provided information on support referrals. Finally, the NVivo-12 (QSR International, 2018) software was used during data analysis, aiding in data management, enabling audit trails, providing a systematic approach to coding and theme generation while enhancing the transparency and reproducibility of the data analysis stage (Beekhuyzen & Bazeley, 2024; Saldana, 2016).

3.13 Conclusion

This chapter outlined the qualitative research methodology, the study's theoretical framework, and the rationale for using an intrinsic qualitative case study. It also detailed the selection process of study participants, inclusion and exclusion criteria, delimit of study, methods, data analysis using Reflexive Thematic Analysis (Braun & Clarke, 2021) and triangulation, ethical considerations, quality assurance measures, data management, and dissemination. Chapter 4 presents the study findings.

Chapter 4: Findings

This chapter presents findings from a qualitative intrinsic case study on the psychosocial health-related needs of individuals with T2DM in Zimbabwe. Following the intrinsic case study's objectives, an in-depth analysis was conducted within and across sub-units, identifying themes and sub-themes based on the lived experiences of diabetes self-care practices in Zimbabwe.

Themes and sub-themes were identified from reflexive thematic analysis (Braun & Clarke, 2022) of verbatim transcripts from semi-structured interviews and focus group discussions and presented narratively with direct quotations. These identified themes and sub-themes across the in-depth interviews and focus group discussions were then triangulated to provide a more nuance understanding psychosocial of health-related needs of people with T2DM in Zimbabwe.

4.1 Sample characteristics of people with T2DM

Initially, eighteen people with T2DM were recruited for this study. However, two withdrew before the in-depth interviews were conducted thus their study screening questionnaires were securely destroyed. Consequently, the data analysis included verbatim transcripts from 16 individuals with T2DM Zimbabwe, comprising ten females and six males, aged between 31 and 63 years. The duration of T2DM among participants ranged from one to 20 years. Seven participants had access to medical health insurance, while nine did not. Most individuals with T2DM were taking oral metformin; some were prescribed glucamide and glibenclamide. One person with T2DM was prescribed insulin injections, while three used a combination of metformin and insulin.

Nine of the in-depth interviews were conducted in English, and seven were conducted in Shona. Thirteen interviews were conducted via telephone, and three were face-to-face. The interviews lasted between 21 and 56 minutes. The key sociodemographic factors of individuals with T2DM are summarised in Table 6 below.

Table 6: Social and Demographic Characteristics of Study Participants with T2DM.

Characteristic	**Category**	**Number of participants**
Age in years	30-39	2
	40-49	5
	50-59	7
	60-64	2
Marital Status	Single	2
	Married	11
	Widowed	3
Education level	O levels	11
	A levels	2
	Bachelor’s degree	1
	Master’s degree	2
Employment Status	Formal Employed	10
	Unemployed/Informal sector	2
	Retired	1
Access to Medical Health Insurance	Yes	7
	No	9

4.1 Findings from In-Depth Interviews

Four themes and accompanying sub-themes were identified from the narratives of people with T2DM in Zimbabwe.

Table 7. Main Themes and Subthemes Identified In Depth Interviews.

Main Theme	**Sub- Themes**
Facing Financial and Economic Constraints	1.1 T2DM is expensive. 1.2 Issues accessing diabetes treatment and supplies.
Living with T2DM is like a seesaw	2.1 Experience of mental health symptoms 2.2 Dealing with Unrecognised mental health conditions
Who supports me?	3.1 On-going support from caregivers with illness and its management. 3.2 On-going support from peers with illness and its management. 3.3 Perceived quality of relationships within social networks.
What worries me?	4.1Experiences of sub-optimal social determinants of health. 4.2 Balancing Religion, Culture, and diabetes self-care.

4.2.1 Theme 1: Facing Financial and Economic Constraints

This theme and its sub-themes explored the experiences of people with T2DM regarding the financial and economic burdens of living with the condition in Zimbabwe, as well as the potential impact on their lived experiences of diabetes self-care. The narratives of people with T2DM highlighted how Zimbabwe's existing macroeconomic challenges created widespread financial hardships that affect all aspects of diabetes self-care.

4.2.1.1 Sub-theme: 'Diabetes is an expensive disease.'

Accounts from people with T2DM emphasised how financial hardships worsen diabetes self-care, often resulting in heightened chronic stress. Batanai, a 56-year-old man living with T2DM and without access to medical insurance, reflected on the significant financial challenges he faces in managing his condition.

> "Ah, living with T2DM is hard. Medications are very expensive in this country. Even though I am employed, I cannot afford to keep stock. Buying medication, food, and everything else it's too much" (Batanai, person with T2DM).

Caroline, a 31-year-old woman with T2DM, further commented that the financial burden of diabetes is often misunderstood by those without the condition. This misunderstanding can sometimes lead to misinterpretations of the impact of T2DM and the use of stigmatising language.

> "So, people don't understand it's hard. It's difficult, especially if you look at our economy. You know, can I afford it? Because now you know here in Zim, they call it the expensive diagnosis when you are diabetic. You are very expensive; you know you're not easy to live with"(Caroline, person with T2DM and with health insurance).

For some people with T2DM, the persistent financial strain compelled them to make difficult choices. Chenai, a 41-year-old single mother with T2DM, described the trade-offs she encountered.

> "It's troubling, especially for us single mothers with school-going children. Trying to balance school fees and medication is tough. Sometimes, you forgo buying medicine to pay school fees and only buy it a week later. During that time, you're worried and scared you might even collapse"(Chenai, person with T2DM and no health insurance).

In addition to medication expenses, the cost of diabetes service visits presents another obstacle to diabetes self-care. Individuals with T2DM express frustration over the steep costs of doctor and specialist appointments.

> “Visiting the doctor is a problem because of the consultation fees. Ah, we can't afford it” (Batanai, person with T2DM and no health insurance).

> “The consultation fee used to be US$10, but now it must be $15. Yes, all the expenses come from my pocket everything” (Trymore, person with T2DM and no health insurance).

Similarly, for people with T2DM who had access to medical health insurance, managing their condition remained a financial burden. Harold, a person with T2DM recounted the on-going challenges of paying out-of-pocket expenses to cover insurance shortfalls.

> “There is what they call a shortfall or co-payment. You still have to pay something… Yaa, you still have to pay. The other day, I paid $120. Yaa, 120 US dollars” (Harold, person with T2DM and with health insurance).

Moreover, for some people with T2DM, having access to medical health insurance did not guarantee that they received diabetes care when needed.

> “The company's medical aid plan turned out to be worthless since neither doctors nor pharmacies would accept it”(Charles, person with T2DM and with health insurance).

The accounts of people with T2DM revealed how the financial difficulties they faced severely restricted their access to essential diabetes self-care resources, limiting their ability to manage their condition effectively in Zimbabwe. Although some study participants with T2DM had access to medical health insurance, many felt that it did not provide the much-needed financial protection. Overall, the narratives of people with T2DM illuminated the significant financial constraints that compelled people with T2DM to make difficult choices between meeting their diabetes self-care needs and covering other vital expenses, such as school fees, within the Zimbabwean context.

4.2.1.2 Sub-theme: Accessing diabetes treatment and supplies is a nightmare.

Economic difficulties and existing structural barriers within the healthcare system in Zimbabwe were highlighted as central to the lived experience of diabetes self-care. People with T2DM reported frequent shortages of critical diabetes medications such as insulin, metformin, and blood glucose monitoring devices. Chenai a person with T2DM, highlighted the impact of the scarcity of insulin.

> “Right now, for those who inject themselves, the medication is sometimes not available in the whole of Zimbabwe” (Chenai, person with T2DM).

Similarly, Namatai, pointed out the irregular supply of metformin, a common oral diabetes medication, at public health facilities managed by government:

> “Our medicines are not easily available. Like at the moment, we have just received metformin after a long time, where I get my drugs at the government hospital” (Namatai, person with T2DM).

As Namatai further argues, individuals with T2DM faced challenges in accessing blood sugar monitoring devices and testing strips. The inconsistent availability of certain brands of these products often compelled her to switch glucometers regularly.

> “This also applies to testing strips, depending on the brand of the glucometer and the type of strips it requires. Some strips are just out of stock, and you have to change your glucometer so often” (Namatai, person with T2DM).

In the absence of reliable glucose monitoring devices and strips, some individuals with T2DM turned to subjective self-assessment. Caroline, a described how she depended on bodily sensations to gauge her blood sugar levels.

> “What I have done myself is I’ve tried to listen to my body. Then I know, oh, it must be high, but I don’t know how high it is. I just try to figure my body out on my own.” (Caroline, person with T2DM).

It is not surprising that many people with T2DM have turned to their social networks for help in managing these supply chain challenges. For example, Nancy, depended on her son in South Africa to obtain her diabetes medications and supplies. While Harold, obtained diabetes-related supplies from his nephew in New Zealand. His story highlights the stark differences in the affordability and funding of diabetes supplies between New Zealand and Zimbabwe.

> "So, what I had to do for myself, I have a son who works in South Africa, so he normally buys medication for me and sends it home” (Nancy, person with T2DM).

> “You know, I got diabetes medicines from New Zealand. I have got a nephew in New Zealand who got it for $5. Everything for Diabetes is just $5. So, there it is heavily subsidised” (Harold, person with T2DM).

The experiences of people with T2DM highlighted the crucial role that diaspora-based social networks can play in mitigating economic challenges and diabetes-related supply chain disruptions, thereby potentially enhancing diabetes self-care in Zimbabwe. However, access to social capital from diaspora-based social network members is not universal, leaving some individuals with T2DM without the much-needed assistance. This lack of support may negatively shape their lived experiences of diabetes self-care and further exacerbates the health inequalities to access to essential T2DM resources in Zimbabwe.

4.2.2 Theme 2: Living with T2DM is like a seesaw.

People with T2DM often felt like their daily lives were emotional rollercoasters. They experienced depressive symptoms, chronic stress, diabetes-related distress, burnout, and mood swings. These feelings are explained in the following sub-themes.

4.2.2.1 Sub-Theme: Experiencing Mental Health-Related Symptoms

T2DM significantly impacted the mental health of people with T2DM with their narratives highlighting perceived feeling of depressive symptoms following diagnosis including low energy, fatigue, and loss of interest in daily activities which negatively impacted their ability to engage in diabetes self-care activities. Also, their insights illuminated the feeling of a sense of isolation that may accompany the diagnosis of T2DM and comorbidity with depression as their reality.

> “The challenges that I have are all the experience, which I did not experience before, depression. I do not know if depression comes from diabetes; I don't know; I sometimes feel like I can stay on my own. I don't want anybody else. I don't want to talk. I just want to be on my own”(Thandiwe, person with T2DM).

Furthermore, some people with T2DM perceived that the fluctuating levels of blood glucose and blood pressure exacerbated their irritability, anxiety, and mood swings, thereby creating a feedback loop that was difficult to break:

> “I am now very short-tempered. I can get up upset and end up reacting like I'm over-sensitive by overreacting very much. When I feel emotionally distressed, my blood pressure and sugar level will rise even if I continue to take my medications”(Charles, person with T2DM).

Some individuals with T2DM expressed critical internal conflicts such as fears of premature death due to T2DM, fear of the impact of T2DM complications, its chronicity, potential loss of economic productivity, worries for their children, and fear of societal judgement social stigma:

> “It’s heart breaking as a diabetic that your life span (laughs) it’s, it’s, the biggest concern is really leaving my kids dying and leaving my kids. Not living to my full potential because of a condition that I have. They will view it it’s a death sentence of some sort, like I am a goner” (Makanaka, person with T2DM).

4.2.2.2 Sub-theme: Unrecognised mental health issues

Narratives from people with T2DM in this study revealed that prevailing sociocultural norms in Zimbabwe may discourage them from seeking mental health assistance when needed. This reluctance is often due to anticipated judgment, discrimination, and social stigma associated with disclosing mental health conditions. Additionally, people with T2DM frequently reported that healthcare professionals often lacked the resources or, at times, the motivation to address their mental health struggles, leaving many feeling dismissed and unsupported.

> “Ah, ah, no! you know in our society, we take mental health very differently from what people in the States do. For us, when you start saying mental health, ah, you know people start having all these ideas. So, I think even the doctors themselves, they are not really keen on, unless if they see that it’s really affecting you mentally” (Tabetha, person with T2DM).

Caroline highlighted her experience perceived insufficient care when she sought referral for mental health support from within diabetes services:

> “Aah, what I have tried, my doctor has not referred me. And when I said it to him, he thought it was not really necessary, but to be honest, I needed that support” (Caroline, people with T2DM).

Furthermore, financial limitations may restrict access to mental health services, as noted by another participant:

> “Ahh, I haven't been anywhere where they offer support. If I am to go, they will need payment for the services” (Chenai, person with T2DM).

4.2 3 Theme 3: Who Supports Me?

This theme illuminated how social networks relationships’ role and perceived support influences diabetes self-care in Zimbabwe practices while emphasising positive and negative experiences as source of emotional distress.

4.2.3.1 Sub-theme: Ongoing support with illness and its management

People with T2DM often identified their close family members as their primary source of support following their diagnosis. This perceived family support was crucial for their engagement in diabetes self-care, highlighting the potentially strong family bonds within Zimbabwean society. For example, Godwin, a, emphasised his family's active involvement in his diabetes self-care:

> “From the time I was diagnosed with Type 2 diabetes, my children er quickly acquired a machine so that I could always test and check my sugar levels” (Godwin, person with T2DM).

However, accounts from people with T2DM revealed a gendered aspect to the perceived quality of support. Men with T2DM, such as Batani, often receive substantial spousal assistance with diabetes self-care activities, including meal planning, medication reminders, and participation in physical activities.

> “Ah my wife, she helps me a lot, especially in reminding me the times for the injections. She will ask if I have not forgotten and insist that I inject myself first. Before I eat food. Yes. She helps me a lot” (Batani, male person with T2DM).

In contrast, some narratives from women with T2DM highlighted a lack of support from their spouses, while shedding light on how gender dynamics, including economic vulnerability and marital conflicts, can impact diabetes selfcare. As illustrated by Makanyara’s account, this sometimes resulted in women with T2DM being denied essential access to diabetes treatment, which was closely tied to emotional distress and anger.

> “I was having problems with my husband because he would tell me, haa, your medication is expensive. I rely on him 100% when it comes to financial issues. At one point in time, my husband totally, said you do not listen, so I am not going to pay, I am not going to buy your medication. He stopped” **(**Makanyara, female person with T2DM).

Some widowed women with T2DM, like Tanaka, highlighted their experiences of economic vulnerability in the absence of a primary breadwinner in the household. This financial strain often forced them to opt for less expensive treatment options, underscoring the difficult decisions they face in managing diabetes self-care:

> "Yaa, I was married, but my husband passed away December 2021. The major problem I have is that the medication is very expensive. I plan to go back to the doctor so that he changes the prescription because the person who used to get them for me is no more. I don't have problems with them, but just the expense" (Tanaka, female person with T2DM).

4.2.3.2 Sub-theme: Ongoing support with illness from peers

This sub-theme highlighted the crucial role that peer support group plays in the lived experience of managing diabetes in Zimbabwe. The experience of receiving peer support was emphasised as being linked to people with T2DM officially joining the formal Zimbabwe Diabetes Association group, as well as other informal diabetes support groups.

The WhatsApp platform facilitated connectivity and the easy dissemination of information, as people with diabetes shared experiences related to managing the condition. Charles highlights the advantages of being affiliated with official peer support group and how the WhatsApp platform facilitated the exchange of informational and emotional support:

> "I am a member of the Zimbabwe Diabetic Association. I have a membership card for the Zimbabwe Diabetes Association. We have a WhatsApp group where we post messages asking others about our symptoms, and people will respond by giving advice such as running, exercising, and getting well. We help each other through the WhatsApp group channel" (Charles, person with T2DM).

Peer-to-peer communication facilitated the exchange of information on diabetes self-care, including physical activity, nutrition, and overall emotional well-being. Nevertheless, some people with T2DM encountered financial obstacles in accessing the formalised peer support group and choosing not to join because of the mandatory registration fee, noting:

> “I am not registered with the Zimbabwe Diabetic Association. They need a $5 registration fee (laughs), so I chose to buy food for my kids instead of registering (laughs)” (Chenai, person with T2DM).

Her experiences highlight the financial difficulties that many people with T2DM in Zimbabwe encounter, often forcing them to choose between medical care and essential living costs. The perceived obstacles to accessing peer groups were regrettable, as people with T2DM with access to the peer reported gaining more than just information; they found camaraderie and inclusion. Harold, a person with T2DM described the profound emotional connections formed: ‘In the group, we are one big family’. His remarks shed light on the importance of peer-to-peer support interactions as a source of solidarity and emotional backing for those living with T2DM in Zimbabwe. Furthermore, the emotional support within these peer groups fostered a safe space for sharing challenges and personal stories without judgement, as Harold noted:

> “It is a safe environment; we are family. We share everything. Here is nothing that you cannot say, there is nothing that's taboo” (Harold, person with T2DM).

4.2.3.3. Sub-theme: Perceived quality of relationships within social networks

This sub-theme explored the perceived quality of relationships within social circles among individuals with T2DM in Zimbabwe. It highlighted the unsupportive interactions experienced during social gatherings and events within the broader community. Furthermore, it delineated some diabetes selfcare strategies that people with T2DM have adopted for these social occasions.

Some individuals with T2DM have expressed their concerns about the perceived discriminatory societal attitudes towards those who require insulin. This perception stems from the belief that T2DM is caused by personal lifestyle choices rather than complex genetics and biopsychosocial factors.

Harold observed that people often make insensitive remarks or assume that needing insulin signifies a rapid deterioration in health:

> "If you're on insulin, people tend to write you off. They think T2DM is a social disease. They think you're on your way out" (Harold, person with T2DM).

Caroline recounted how others would make unsolicited remarks about her dietary choices and express assumptions regarding the impact of T2DM on sexual health on her intimate relationship, underscoring a societal lack of empathy and awareness of T2DM. Unfortunately, these unhelpful comments may make people with T2DM feel stigmatised impacting diabetes self-care:

Some people with T2DM noted that their social networks often attempted to manage their dietary choices, in an overbearing way. For instance, Tabetha (PWD) shared an experience where her mother's misunderstanding of diabetes led to unhelpful interference:

> "'Like my mother sometimes, when I am with her, she's like, 'Why are you not eating? You are supposed to be eating very frequently because you have diabetes" (Tabetha, person with T2DM).

The perspective underscored how some well-intentioned suggestions and misguided views from social network members may lead to emotional distress and adversely affect diabetes management. Consequently, some people with T2DM demonstrated self-reliant coping strategies to manage their condition during social events exemplifying the problem-solving skills of people with diabetes as they adopt coping mechanisms at social gatherings. For example, Nyasha, shared that she consistently brings her own provisions to social gatherings:

> "When I'm out, I always have my own water and a snack like popped maize/corn with me. As soon as I feel hungry, I eat my snack and drink my water" (Nyasha, person with T2DM).

Despite these problem-solving efforts, managing diabetes self-care in social settings remains challenging, particularly due to societal expectations. Charles's account revealed the tension between diabetes care practices and the desire for social acceptance, leading to occasional lapses in diabetes self-care.

> “I sometimes forget to bring my food and find it hard at social gatherings. I often attend banquets and ceremonies where beer is available. I know as a diabetic, I should avoid alcohol, but I end up drinking. It's a special occasion, and if I don't drink, I'll have trouble socialising. People will avoid me, so I feel compelled to drink sometimes”(Charles, person with T2DM).

4.2.4 Theme 4: What Worries Me?

This theme explored into the experiences of people with T2DM in Zimbabwe, focusing on their lived experiences of diabetes self-care at the intersection with sub-optimal social determinants of health. Critical issues such as the lack of public health policy, inadequate healthcare funding and experiences of health seeking in government and private health care systems are further elaborated in the sub-themes below:

4.2.4.1 Sub-theme: Experiences of sub-optimal SDH

People with T2DM expressed their frustrations regarding the current diabetes care services in Zimbabwe, highlighting significant issues related to the accessibility and affordability of these services, as well as the availability of essential T2DM medications and supplies. These systemic challenges were perceived as major obstacles to effective diabetes self-care.

> “Like I mentioned before, is the cost of medication. I do not know how we can talk to the powers that be to help us, especially those not on medical aid. The medication is very expensive and in hospitals the medication is not available” (Winnet, person with T2DM).

Furthermore, narratives from individuals with T2DM highlighted gaps in public healthcare policy between communicable and noncommunicable diseases. Their voices shed light on the perceived preferential treatment given to the management of communicable diseases such as HIV, malaria, and tuberculosis, which alleviated the financial burden for those living with these conditions. Interestingly, the study participants expressed a desire for the Government of Zimbabwe and international donor communities to extend the policies and funding mechanisms available for vertical communicable disease programs to include non-communicable diseases like diabetes. This extension would help eliminate the current financial burden posed by T2DM and address persistent supply chain issues of essential diabetes treatments. Charles's account emphasised this feeling of unfairness in care:

> "HIV patients receive free healthcare and medications, but diabetes patients lack such facilities and services" (Charles, person with T2DM)

As Namatai further emphasised, there was an urgent need for Zimbabwe's Ministry of Health to take action, particularly since T2DM may also co-occur with mental health conditions, with the burden of both diseases among people with T2DM currently unknown:

> "We have a growing undetected burden of Diabetes, for example. We don't even know. How many people are living with it. And if you look at it, really, if you look at it, there is that also the mental health aspect of it, so, diabetic with a mental health issue so you end up two non-communicable diseases" (Namatai, person with T2DM).

Taken together, these sub-themes highlighted the perception that T2DM and mental health care are neglected at health policy level, despite their possible rise of both in Zimbabwe. The lack of funding or financial support, along with the lack of epidemiological data, suggests potential drivers of emotional distress and feelings of social exclusion among people with T2DM in Zimbabwe.

4.2.4.2 Sub-theme: Balancing Religion, Culture, and Diabetes Self-Care

This sub-theme explored how existing sociocultural norms, including religious and spiritual beliefs, shape the health beliefs and illness perceptions of individuals with T2DM, as well as influence their diabetes self-care. Interestingly, some individuals with T2DM expressed concerns that certain religious and spiritual practices might lead them to abandon medical treatments, resulting in adverse health consequences. On the other hand, some accounts from people with T2DM revealed complex relationships between their use of traditional and conventional drug treatments as part of their diabetes self-care. For instance, as cautioned by Namatai:

> “I have seen people, after receiving prayers, discarded their insulin and diabetes pills, leading to complications and unnecessary loss of life.” (Namatai, person with T2DM).

Nonetheless, some people with T2DM reported integrating conventional and alternative diabetes treatments, suggesting that the traditional herbs use resonates with Zimbabwe's cultural and health beliefs. Consequently, herbal remedies from traditional medicine were often mentioned as alternatives or supplements to biomedical therapies. While recognising the potential benefits of these alternative approaches, participants stressed the importance of caution, especially when managing blood glucose levels. To illustrate this, Charles shared his personal experience with after using traditional medicine as part of diabetes self-care:

> “After consuming some traditional medicine, I observed a significant decrease in my blood sugar levels. Although these remedies can effectively reduce blood sugar, I consistently monitor my levels after ingesting them. If I observe a spike or a substantial decrease, I consume a teaspoon of sugar to normalise my levels” (Charles, person with T2DM).

Charles's assertion indicates that some people with T2DM are aware of the risks associated with combining conventional and alternative treatments. This suggests that some individuals with T2DM perceive the effectiveness of these traditional herbs as still uncertain thus as a precaution, they meticulously monitor their blood sugar levels.

4.3 Findings from Focus Group Discussions

Data was gathered from three focus group discussions: one with caregivers, another with self-identified diabetes advocates, and a third with healthcare professionals involved in diabetes care in Zimbabwe. They were audio recorded, transcribed, and analysed using Reflexive Thematic Analysis (Braun & Clarke 2022). A total of 15 individuals participated in the focus group discussions with their demographic summarised in Table 8 below. Two of the sessions were conducted via telephone conference, while one was held using Zoom. The discussions lasted between 55 and 90 minutes. They were audio recorded, transcribed, and analysed using Reflexive Thematic Analysis (Braun & Clarke 2022).

Table 8. Summary of focus group discussions participants

Focus Group Discussion 1	Caregivers	Madeline, female caregiver to mum with T2DM.
		Genesis, female caregiver to husband and in-laws with T2DM.
		Delilah, female caregiver to parents with T2DM
		Wilma, female caregiver to mum with T2DM.
		Tanya, female caregiver to grandmother with T2DM.
Focus Group Discussion 2	Diabetes advocates	Nadia, female advocate living with Type 1 diabetes.
		Yasmin, female advocate living with Type 1 diabetes.
		Bonnie, a female advocate not living with diabetes.
		Rebekah, female advocate living with Type 1 diabetes.
		Therese, female advocate living with Type 1 diabetes.

Focus Group Discussion 3	Diabetes nurses	Flora, female diabetes nurse
		Melody, female diabetes nurse
		Pamela, female diabetes nurse
		Denise, female diabetes nurse
		Wendy, female diabetes nurse

4.3.2 Themes and Sub-themes from focus group discussions

Two main themes and one sub-theme were identified from the perspectives of caregivers, self-identified diabetes advocates, and diabetes nurses as shown in Table 9.

Table 9. Summary of themes and sub-themes identified across focus group discussions with caregivers, diabetes advocates, and healthcare providers.

Themes	Sub-Themes
Psychosocial burdens of living with T2DM	1.1: Emotional and Psychological Toll of T2DM 1.2 Experiences of Mental Health Conditions 1.3 Psychological Health-Related Needs Within Diabetes Care
Experiencing of sub-optimal social determinants of heath	

4.3.2.1 Theme: Psychosocial burdens of living with T2DM

This theme shed light on the emotional, psychological, and social challenges encountered by people with T2DM in Zimbabwe, as reported by self-identified caregivers, advocates, and diabetes healthcare professionals. These challenges underscore the lived experience of diabetes self-care at the intersection of social determinants of health and psychosocial factors in Zimbabwe, as further elaborated in the sub-themes below.

4.3.2.2 Sub-theme: Emotional and Psychological Toll of T2DM

Caregivers deeply understood the emotional burden of T2DM, empathising with their family members with their narratives using vivid language to express how individuals with T2DM in Zimbabwe may perceive their condition. This perception by caregivers arose from observing the relentless demands of diabetes self-care on their loved ones especially they try to adopt diabetes-specific lifestyle following a T2DM diagnosis.

> “Because to them, it's like a death sentence” (Delilah, caregiver).

Similarly, Genesis shared insights from her caregiving experience with her mother, agreeing with Deliah’s assertions. She further emphasised how people with T2DM may eventually experience feelings of hopelessness and defeat as they live with their condition.

> “I agree with you. And I also think that erm, I think at the end of the day, after living like for a long time with T2DM they eventually give up. I actually noticed that, like during the time when my mum was sick, when I would be talking to her, she would just be like, ‘I just wish I could die because I have had so much, I have been through so much with this diabetes, and I am tired’” (Genesis, caregiver).

The diabetes advocates discussed another source of emotional distress, emphasising the multiple components and continuous demands of diabetes self-care, which meant there was no respite from the condition.

> "There is no break. It's a 24-hour job. There is no in-between" (Yasmin, diabetes advocate).

The constant decision-making and daily vigilance required for diabetes self-care were described as overwhelming, leading to emotional distress and burnout among people with T2DM. As most self-identified advocates were living with Type 1 diabetes, their perspective may point to shared experience of diabetes self-care in Zimbabwe.

Healthcare professionals in this study shared insights from their experiences with T2DM, highlighting another potential source of emotional distress. They pointed out potential misconceptions stemming from socio-cultural beliefs or misinformation about the impact of T2DM on sexual health in Zimbabwe Specifically, they noted that erectile dysfunction in men and vaginal yeast infections in women with T2DM are common issues. However, the lack of awareness about these problems can lead to emotional distress, communication breakdowns, and marital conflicts.

> “It can lead to domestic violence before knowing it could be diabetes causing that vaginal thrush” (Denise, diabetes nurse).

Additionally, the lack of awareness about the connection between diabetes and sexual health was thought to result in shame or confusion. Men with T2DM experiencing erectile dysfunction might be accused of adultery or believed to be under a spell, as illustrated by another nursing echoing:

> “The lady may think that it is black magic, or he has been doing something behind my back. However, it is diabetes”(Pamela, diabetes nurse).

4.3.2.3 Sub-theme: Experiences of Mental Health Conditions

The psychological impact of T2DM extends beyond emotional or diabetes related-distress, including often-overlooked mental health conditions such as depression, anxiety, burnout, and chronic stress. These mental health conditions are frequently experienced by people with T2DM in Zimbabwe, with health professionals like Pamela highlighting that they are common.

> “Because all these mental health conditions like stress, anxiety, depression er, and eating disorders can be a challenge”(Pamela, diabetes nurse).

Nevertheless, the prevailing sociocultural norms in Zimbabwe are perceived to significantly influence attitudes toward mental health, with denial and stigma often hindering open discussions about psychological issues. Nadia, a diabetes advocate, noted that many people with T2DM remain in denial, refusing to acknowledge the mental health implications of T2DM**.**

> “Ok, so maybe looking at it from a mental perspective, why is it difficult to have some of these discussions, we still have people living in denial, people who believe that these conditions don’t exist” (Nadia, diabetes advocate).

Additionally, self-identified caregivers and diabetes advocates highlighted people with T2DM may also experience societal misconceptions, stigma, and discriminatory attitudes stemming from misperceptions that T2DM is lifestyle condition and is caused by personal choices around body weight management and personal dietary habits while disregarding other contributing factors outside the control of people with T2DM. They noted that stigma, especially concerning, often hinders people with T2DM’s ability to follow diabetes self-care and its unfortunate public perception intensifies this stigma:

> “You are told it's caused by obesity, all these funny things that aren't so nice to hear” (Bonnie, diabetes advocate).

Consequently, societal attitudes and misconceptions about T2DM in Zimbabwe not only affect the mental health of individuals with T2DM but also present additional challenges such as emotional distress and diabetes-related distress which negatively impact diabetes self-care. This social bias not only affects the mental health of those living with T2DM but also creates additional challenges in their diabetes self-care efforts, as societal attitudes and misconceptions may add to the complexity of managing the condition within the Zimbabwean context.

4.3.2.4 Sub-theme: Psychological Health-Related Needs Within Diabetes Care

There was a clear consensus among various focus group discussions on the urgent need to recognise T2DM and its comorbidity with mental health conditions, which the study advocated should be integrated into diabetes care. For example, Wendy, a diabetes nurse, expressed her ability to recognise signs of depression or emotional distress in people with diabetes:

> “I think you can easily see that this person is depressed or there is something that is troubling them, so, the good way, you talk to the patient nicely until you get to the point, and then if that patient is free, mostly they will open up. Then you discuss, if there's need for a counsellor as such, then you refer the patient, or you just discuss and talk to the patient about counselling service” (Wendy, diabetes nurse).

Nevertheless, structural barriers to integrating mental health into diabetes care were consistently emphasised, such as including lack of health care funding, insufficient formal training for diabetes and mental health care professionals, and overburdened mental health services:

> “It's almost impossible, if not impossible, for us to, for diabetic patients, as of now, in this time and era in Zimbabwe particularly to have access to services that cater for mental health and mental wellbeing” (Bonnie, diabetes advocate).

Similarly, the diabetic healthcare professionals expressed concerns about the absence of structured training in offering emotional support and guidance for T2DM. While they frequently established rapport with patients that allowed them to recognise indicators of emotional distress, they emphasised the necessity of appropriate education to provide effective mental health support.

> “Maybe even the nurses can be trained to do the counselling for the patient” (Flora, diabetes nurse).

This implies that their knowledge of psychosocial aspects of T2DM may further be improved by appropriate training and support. However, the current mental healthcare infrastructure in Zimbabwe was reported to be inadequately resourced for managing such mental referrals. Nurse Melody pointed out the overwhelming caseload in mental health facilities, stating:

> “Even those in mental institutions are overwhelmed” (Melody, diabetes nurse).

Consequently, patients referred for mental health services may face delays of weeks to months before receiving care. Also, health care professionals’ narratives suggested they had limited experience of referring people with T2DM to peer support groups indicating a lack of experience and scarcity of existing diabetes patient support groups.

> “I haven't referred anyone to the Zimbabwe Diabetic Association or peer support group” (Denise, diabetes nurse).

4.4 Theme: Experiencing of sub-optimal social determinants of health.

This theme captured the experiences of sub-optimal SDH factors as they intersect with diabetes self-care in Zimbabwe, while also highlighting the nuanced insights of focus group participants. From the discussions, it became evident that T2DM and other non-communicable diseases need to be recognized as public health issues by policymakers and donor funders in Zimbabwe. The primary reason for advocating policy change was the perceived greater attention given to communicable diseases such as HIV and AIDS, malaria, and tuberculosis.

It was apparent that existing public health policies and donor funding support for vertical communicable disease programs have been crucial in addressing and eliminating barriers to access and treatment for these conditions. Consequently, participants' accounts underscored strategies that policymakers should employ to address the health needs of people with T2DM in Zimbabwe. While healthcare professionals specialising in diabetes in this study emphasised the critical importance of adhering to recommended diabetes self-care advice, collectively emphasising the necessity of compliance:

> "They need compliance!" (All diabetes nurses).

Nevertheless, caregivers and diabetes advocates argued that expectations of strict concordance with diabetes self-care fail to consider the real-life challenges faced by people living with T2DM. In reality, many individuals with T2DM struggled to shift from long-standing lifestyle habits to recommended self-care behaviours such as engaging in regular physical activity or adopting healthier eating patterns because these changes were often impractical, difficult to sustain, or financially burdensome.

> “I haven't seen my family members do that if you were not exercising before, now trying to do exercises, it's not practical”(Madeline, caregiver).

Nadia further supported this view by lamenting the economic challenges in accessing diabetes medications and nutritious food in Zimbabwe. She highlighted the difficult choices people with T2DM face, as they must balance their diabetes health-related needs with economic survival in a resource-constrained environment like Zimbabwe.

> “It's a bittersweet how people are living with diabetes in Zimbabwe. Because yes, the economy is definitely hard, and people can't afford the recommended drug and food they are supposed to be using or easting. It's a thin line between diabetes and survival” (Nadia, diabetes advocate).

Upon further inquiry the perspectives of diabetes healthcare professionals appeared to be aligned with those of self-identified caregivers and diabetes advocates, recognizing the socio-economic and cultural barriers to effective diabetes self-care in Zimbabwe. A primary concern highlighted by the study participants was the limited access to and high costs of essential diabetes medications and glucose monitoring equipment. Many participants noted that the expenses related to traveling to major city hospitals, along with medication shortages, impeded the ability of individuals with T2DM to manage their condition effectively. Flora, a diabetes nurse, exemplified these challenges:

> “In my experience, it can be a lack of money and resources to come and seek treatment. That's the challenge of getting someone from as far as rural area M, and that patient has complications of diabetes. Then the patient is referred, let's say to hospital Y. They need some money so that the patient can get some treatment when they get there. The

> problem with medication is that the supply is very poor "(Flora, diabetes nurse).

Secondly, participants from all focus groups discussions highlighted the lack of reliable epidemiological data on T2DM, pointing out that official statistics likely underestimate the disease's burden and impact. The absence of accurate data further obstructs the recognition of T2DM as a significant public health issue. Advocate Bonnie argued that these epidemiological data shortcomings may impede policymakers' comprehensive understanding of the diabetes problem.

> "The numbers don't really tally with WHO projection, because WHO will tell you a couple million, but in Zimbabwe, maybe it has just got about 10,000 recorded cases which is not actually a true reflection of what's happening... we could be sitting on an explosion in terms of economic problems that will arise, because you know what, there is an issue like this. It has got repercussions, economically and socially" (Bonnie, diabetes advocate).

Thirdly, participants highlighted the financial strain faced by people with T2DM due to the lack of universal healthcare funding or diabetes specific health funding in Zimbabwe. Wilma, a caregiver, observed:

> "For T2DM, there is not enough funding. For Diabetes, you find out that someone is diagnosed today; they don't know that they are diabetic because it's expensive for them even to get testing. They can't get screening" (Wilma, diabetes caregiver).

Consequently, these three groups of participants collectively shared their views on strategies the Zimbabwean government and key stakeholders in healthcare might consider to urgently address the challenges faced by individuals with T2DM.

> "For me, I think the government should have a fund for patients with diabetes mellitus because dm is causing a lot of complications like diabetes, foot, and hypertension. So, I think we should have a fund for diabetic patients alone. Umm, I think our government has to put effort,

> especially in the hospitals under the government" (Melody, diabetes nurse).

Similarly, Nadia emphasised the necessity of offering financial assistance to people with T2DM, highlighting the prevalent absence of medical aid insurance in Zimbabwe:

> "Many people, due to their economic status, cannot afford things like medical aid insurance" (Nadia, diabetes advocate).

Study participants advocated a policy shift to acknowledge diabetes and other non-communicable diseases as critical public health concerns. One participant, Bonnie, articulated the necessity of engaging policymakers to facilitate this change:

> "The challenges the people with diabetes are experiencing in Zimbabwe, the importance of policy change, the importance of lobbying, those people, because, thinking of communicable diseases, your HIV, your malaria, your cholera, they get much attention of the communicable disease" (Bonnie, diabetes advocate).

This sentiment was echoed by others concerned with diabetes, who emphasized the necessity of substantial healthcare funding to provide quality diabetes services that minimise complications.

> "For me, I think the government should have a fund, like the cancer fund, for patients with diabetes mellitus because I have seen a lot of people are coming with DM, right? I think our government has to put effort, especially in the hospitals under the government"(Flora, diabetes nurse).

Similarly, from the diabetes advocates echoed the above perspective:

> "Moreover, people suffering from T2DM 2 require financial support, and as you know, many people suffer due to their economic status. For

> example, in Zimbabwe, many people cannot afford things like medical aid insurance" (Nadia, diabetes advocate).

4.5. Data Triangulation Summary

An intrinsic qualitative case study proves highly advantageous for qualitative research, particularly when examining complex phenomena such as diabetes self-care practices in a resource-limited setting like Zimbabwe. By triangulating perspectives from study participants with lived and professional experiences of T2DM in Zimbabwe, it facilitates a nuanced understanding of the psychosocial health-related needs of people with T2DM in Zimbabwe, as illustrated in the table 10 below:

Table 10. Summary of Triangulation Outcome across themes and sub-themes on psychosocial health-related needs of people with T2DM in Zimbabwe.

Key findings	**People with T2DM**	**Caregivers**	**Advocates**	**Diabetes Nurses**	**Outcome**
Lack of public health policy	✓	✓	✓	✓	Convergent
Sources of emotional distress	✓	✓	✓	✓	Complementary
Perceived Availability & Responsiveness of Mental Health Support.	x	x	x	✓	Dissonance
Maladaptive Coping strategies.	✓	χ	x	×	Silence
Adaptive coping strategies	✓	x	x	x	Silence

✓ Highlighted × Not Highlighted

4.5.1 Convergence of Findings

All study participant groups agreed that structural barriers in Zimbabwe hinder effective diabetes self-care. They highlighted the urgent need for better healthcare funding and supportive public health policies for diabetes that are similar to those for acquired immunodeficiency disease, malaria, tuberculosis, and cancer. Because of the perceived policy and funding gaps, people with T2DM were seen as facing significant financial strain from high out-of-pocket costs while trying to meet other basic needs. This shared perspective highlighted how the lack of diabetes-specific policy functions as a social determinant of health, contributing to unmet psychosocial health-related need of people with T2DM in Zimbabwe.

4.5.2 Complementary of Findings

It is important for sources of emotional distress that may be part of their lived experience of diabetes self-care within a context such as Zimbabwe to be explored. People with T2DM narratives illustrated the emotional toll of T2DM and comorbidity with mental health conditions such as depression, diabetes-related distress, burnout, diabetes-related stigma, and anxiety. Other study groups further acknowledged the other potential sources of emotional distress related with a diabetes self-care as well as T2DM diagnosis in Zimbabwe. For example, caregivers’ perspectives were shaped by witnessing the overwhelming demands of diabetes self-care as their loved ones struggled with adopting both recommended lifestyle and dietary changes, as well as experiencing hopelessness, and fear of death. Diabetes advocates pointed to the relentless demand of diabetes self-care as a perpetual source of emotional distress. At the same time, health professionals highlighted how misconceptions about the impact of T2DM on sexual health, especially complications like erectile dysfunction in men and vaginal yeast infections in women may can cause emotional distress, communication breakdowns, and marital conflicts due to cultural beliefs or misinformation. While the perspectives of all study groups were complementary, the findings offer a comprehensive view of T2DM comorbidity with unrecognised emotional distress and how this may negatively impact the lived experience of diabetes self-care.

The widespread recognition of diabetes-related stigma and the sensitivity surrounding mental health issues is significant within the Zimbabwean context, as it can hinder individuals from disclosing their condition and seeking help. Consequently, there is a pressing need for enhanced awareness and education to combat diabetes-related stigma and promote open discussions about mental health in the context of diabetes care in Zimbabwe.

4.5.3 Dissonance of findings

There was a noticeable discrepancy in how mental health support availability was perceived to be available for people with T2DM within the healthcare system in Zimbabwe. Those with the lived experience of T2DM expressed frustration over the lack of psychological support in diabetes self-care and felt dismissed when seeking referrals for mental health assistance, pointing to potential shortcomings among healthcare professionals. In contrast, healthcare professionals, during focus group discussions, demonstrated their ability to identify psychological issues such as depression or diabetes-related distress in people with T2DM. However, they reported insufficient training or protocols to address the psychosocial aspects of T2DM within diabetes care. This divergence in perceptions suggests a systemic gap between the psychological health-related needs of people with T2DM and the healthcare system's capacity, highlighting shortcomings of the absence of integrated mental health support within diabetes care frameworks in Zimbabwe.

4.5.4 Silence of Findings

Firstly, the narratives of participants with lived experiences of T2DM highlighted experiences of cost-related non-adherence behaviours, such as missing treatments or skipping medical refills as well as the widely use of biomedical diabetes drugs and traditional herbs as part of diabetes self-care. Despite healthcare professionals being specifically questioned about this issue, they failed to acknowledge the widely accepted practice of integrating biomedical and traditional herbs into the diabetes self-care routines of people with T2DM in Zimbabwe. This silence from healthcare professionals on such a crucial theme highlights a gap in their awareness of the treatment preferences of people with T2DM. Also, the prevalent use of traditional herbal medicine may reflect cultural preferences among people with T2DM in Zimbabwe which diabetes healthcare professionals should recognise as part of providing patient-centred diabetes services. Secondly, people with T2DM were utilising instrumental support to acquire essential diabetes medications and supplies from family and friends residing in the diaspora. This unique sub-theme was not mentioned by any of participants in the focus group discussions.

This unique perspective highlighted some adaptive coping strategies employed by people with T2DM at the household level, emphasising how connections with the diaspora based social network may facilitate diabetes self-care in contexts like Zimbabwe, where economic challenges and erratic supply chain issues of key diabetes drugs and supplies pose barriers. Therefore, unique perspective suggests that there may be value in establishing community initiatives or collaborations with diaspora-based groups, involving all stakeholders in diabetes care within Zimbabwe.

4.6 Conclusion

The findings chapter summarised key factors underpinning the lived experience of diabetes self-care in Zimbabwe, while highlighting the unmet psychosocial health-related needs of people with T2DM. Study participants noted that diabetes and mental health care in Zimbabwe are affected by several factors, including the absence of public health policies on non-communicable diseases, the influence of donor-sponsored vertical programs with their focus on communicable diseases like HIV, TB, or Malaria on healthcare funding, the existence of an unregulated medical health insurance market, and declines in macro-economic stability impacting healthcare funding over the past four decades.

Unsurprisingly, people with T2DM reported unmet social health-related needs, such as financial instability, diabetes-related food insecurity, and systemic healthcare barriers, including shortages of essential diabetes drugs and other supplies, high-cost care, exposure to an unregulated private health insurance market, and catastrophic out-of-pocket expenses. Consequently, many have resorted to maladaptive coping strategies, including cost-related non-adherence to treatment and the use of traditional herbs.

These obstacles at the level of people of T2DM highlighted the negative impact of suboptimal social determinants of health on diabetes self-care and outcomes in Zimbabwe. Additionally, existing sociocultural norms, including health beliefs, illness perception, religion, and spiritual practices, significantly influenced diabetes selfcare, often conflicting with healthcare providers' biomedical approaches, such as the widespread acceptance of traditional herbs and the consumption of restricted foods during social gatherings.

Furthermore, the burden of living with T2DM, coupled with economic stress in a resource-constrained setting, may lead to unrecognised and unmet psychological health-related needs. Therefore, people with T2DM may experience emotional distress, diabetes-related distress depressive symptoms, anxiety, chronic stress, and burnout, further complicating their ability to manage their condition. The existing mental healthcare system in Zimbabwe is inadequate for addressing these challenges.

Finally, the role of social networks and perceived quality of support in diabetes self-care is evident. Spouses, children, relatives, and peers provided the must needed informational, tangible, and emotional support. Additionally, some diaspora-based members of social networks were highlighted as important sources of financial and instrumental support; however, some social interactions may have contributed to emotional distress and diabetes-related stigma. Positive experiences, especially through peer support groups and family involvement, were crucial in facilitating diabetes self-management in Zimbabwe. Overall, this study finding suggests that improving diabetes self-care outcomes in Zimbabwe requires a multi-level response, including strengthening public health policy and resource allocation for non-communicable diseases and integrating psychosocial support into diabetes care.

Chapter 5 critically mapped these findings to the study's theoretical framework to the existing literature and highlighted their implications for practice and policy.

Chapter 5: Discussion and Conclusion

5.0 Introduction

Most empirical research on the psychosocial health needs of individuals with T2DM has been conducted in high-income countries using quantitative methodologies (Browne et al., 2017; Nicolucci et al., 2013; Peyrot et al., 2013). The integrative review identified only six qualitative studies conducted in low- to middle-income countries, all of which focused exclusively on the experiences of people with T2DM. Notably, the study by Stoop and colleagues (2019) also explored the psychosocial health needs of individuals with T2DM through a qualitative approach, considering the perspectives of those with T2DM and the healthcare professionals within a primary setting in a high-income country. While that study findings were informative the level of diabetes services may vary between high-income and low- to middle-income countries.

To the best of my knowledge, this study was the first to explore the psychosocial health-related needs using a qualitative intrinsic case from the perspectives of those with lived (people with T2DM, self-identified caregivers, unpaid diabetes advocates) and professional (diabetes healthcare professionals) experiences of diabetes self-care in Zimbabwe. This is because the lived experience of T2DM occur within social milieu (Manser et al., 2025). This study identified themes that pointed to intersection of the lived experiences of sub-optimal social determinants of health, psychosocial factors, complicated dynamics within interpersonal relationships, convergence of multiple social identities and diabetes self-care in Zimbabwe.

The study findings were meticulously analysed using the Social Ecological Model and Intersectionality Framework, which served as interpretative tools, as detailed in sections 5.1-5.6. A summary of findings related to the research questions and key contributions are presented in section 5.7. The theoretical and empirical contributions of this PhD thesis are elaborated in sections 5.8-5.9. The strengths and limitations of the study are discussed in section 5.10. Finally, policy implications and key recommendations are outlined in sections 5.11 to 5.12.

5.1 Lived experience of diabetes self-care at the macroeconomic policy level of influence.

T2DM care often emphasises innovative biomedical treatments while overlooking the psychological and social challenges associated with the condition, which may adversely affect diabetes self-care (Nanayakkara et al., 2018; Polonsky et al., 2022). Research shows that people with T2DM often experience psychological issues such as depression, anxiety, burnout, diabetes distress, and chronic stress. Additionally, they may face health-related social needs, including financial instability, interpersonal conflicts, food insecurities, and limited access to diabetes services, which can negatively impact their adherence to diabetes self-care practices (Kreuter et al., 2021; Gonzalez et al., 2016). These social factors, known as social determinants of health, are beyond the control of individuals with T2DM but are correlated with diabetes self-care (Khosravizadeh et al., 2024).

According to Bronfenbrenner (1979) social determinants of health can manifest at the micro, meso, or macro levels of the human ecological system and influence recommended health behaviours, such as diabetes self-care, leading to varied lived experiences in resource-constrained contexts like Zimbabwe. The lived experience of diabetes self-care among people with T2DM in Zimbabwe was perceived as being shaped by a combination of macroeconomic factors and lack of positive public health policies. People with T2DM were perceived to endure chronic financial and emotional stress as they had to make choices between following to diabetes self-care recommendations and addressing competing priorities, such as school fees, food insecurity and transport costs. As a result, most people with T2DM were believed to be facing catastrophic out-of-pocket healthcare expenses, which led to cost-related non-adherence behaviours.

Furthermore, study participants narratives highlighted the existing public health policy and funding gaps between communicable and non-communicable diseases. They also noted that the Government of Zimbabwe and international donors tended to prioritise vertical programs addressing human immunodeficiency virus/Acquired Immunodeficiency Disease Syndrome, Malaria, Tuberculosis, Cancer, and maternal and infant health, often at the expense of noncommunicable diseases, including mental health and T2DM.

People with T2DM were reported to experience financial difficulties in accessing essential psychosocial support and diabetes care in Zimbabwe. In contrast, people with communicable diseases currently benefit from existing policies, notably the National HIV Levy Policy (2000) which was highlighted by the study participants as an effective public health measure. This policy has significantly reduced barriers to healthcare access and the cost of essential antiretroviral therapy for people living with HIV (Bhat, 2016).

Furthermore, participants felt that T2DM and mental health issues were not recognised as key public health concerns due to the lack of comprehensive epidemiological data. The perspectives of current study participants align with previous research, indicating that the lived experiences of diabetes care and the psychosocial aspects of T2DM, especially in low-income countries, can be shaped by existing health policies and poverty alleviation programs that eliminate structural barriers to accessing diabetes healthcare.

In a study conducted in Mexico, Rodriguez and colleagues (2019) found that the availability of free diabetes medication and access to diabetes care was perceived as enhancing the lived experiences of individuals with T2DM. Similarly, the two qualitative studies (Mendenhall et al., 2015; Mwila et al., 2019) conducted in sub-Saharan Africa highlighted the improvement in health use because of the availability of free diabetes services in Zambia and South Africa. Yet people with T2DM in these countries still reported incurring out-of-pocket expenses, particularly for diabetes medications, supplies, and specific foods.

Thus, this intrinsic qualitative study highlighted the unique contextual factors, particularly how the absence of positive, country-specific public health policies on healthcare funding and non-communicable disease management in Zimbabwe serves as a critical upstream social determinant of health which shaped the lived experiences of diabetes self-care, while pointing to unmet health-related social needs. Not surprisingly, participants within this study narratives advocated for the urgent address of the perceived lack of noncommunicable disease funding prioritisation, while voicing actionable recommendations key stakeholders in the public health policy arena in Zimbabwe, which may not be as prominent in other qualitative studies (Mendenhall et al., 2015; Mwila et al., 2019).

Therefore, study contributed to the literature on the psychosocial aspects of T2DM by illuminating the lived experiences of diabetes self-care at the intersection with a lack of positive public health policies and funding in Zimbabwe when compared to other countries in sub-Sahara Africa with slightly better public health policy infrastructure such as Zambia and South Africa. This area remains relatively understudied in sub-Sahara Africa (Stephani et al, 2018; Zimmermann et al., 2018).

5.2. Lived experiences diabetes self-care at the health care level of influence.

The narratives of participants highlighted structural barriers in government funded hospitals, including user fee charges, supply chain issues for essential diabetes medications and supplies, and significant shortages of healthcare professionals. These factors illustrate how organisational-level elements at the social ecological model level influence diabetes self-care.

As results of perceived fragmented diabetes care in Zimbabwe people with T2DM mainly sought treatment at private healthcare institutions, tertiary and quaternary government-funded hospitals rather than at lower levels of the healthcare system. The availability of diabetes services at these higher levels of healthcare system in Zimbabwe suggests potential geographical health inequalities in diabetes service provision, as well as a lack of integration of diabetes care at primary care levels, in line with the Package of Essential non-communicable diseases recommendations (World Health Organisation, 2009).

Unsurprisingly, experiences seeking diabetes care in private health facilities were widely relied on by people with T2DM because of the perceived inadequacy and poor quality of public healthcare services. This study findings align with previous studies conducted in India (Nimesh et al., 2019; Rutebemberwa et al., 2019), which reported that people with T2DM preferred private healthcare settings due to inconsistent supplies of diabetes medication and perceived poor service quality in the public healthcare system. Additionally, seeking treatment at a private healthcare institution was perceived to be facilitated by people with T2DM having access to employer-sponsored medical health insurance coverage in Zimbabwe. Thus, having access to medical health insurance policies influenced healthcare utilisation decisions, including diabetes self-care (Brindley et al., 2024).

However, some of the existing medical health coverages in Zimbabwe were perceived to be unhelpful or offered inadequate coverage, with some being rejected by healthcare providers. This, study findings suggest that some of medical health insurance cover in Zimbabwe may be inadequate for patients with T2DM, resulting in higher out of pocket and catastrophic healthcare expenses. While the study of Mureya and colleagues (2022), highlighted identified similar systematic barriers, this study revealed such unavailability of essential diabetes medications, poor infrastructure, and high out-of-pocket costs in government-run facilities. This study added new insights into possible inadequacy of the existing medical health coverage as key vital that influences diabetes self-care at organisation level of the social ecological model.

Specifically the current study highlighted that private healthcare providers have become the primary providers of diabetes care due to shortcomings in Zimbabwe's publicly funded healthcare system, which may influence the healthcare utilisation of people with T2DM. Additionally, the study revealed that having access to medical health insurance did not consistently provide people with T2DM with the anticipated financial protection in Zimbabwe. Consequently, the study findings suggest diabetes self-care may not be adequately funded or protected via medical health insurance, meaning people with T2DM face catastrophic health costs in Zimbabwe as compared to other countries with free health care or stronger regulation of health insurance.

5.2.1 Lack of psychosocial support at healthcare system level of influence.

The integration of psychosocial aspects into diabetes care, alongside traditional biomedical approaches, has been shown to improve diabetes self-care (Derese et al., 2024; El Sayed et al., 2023; Fisher et al., 2024). Although international diabetes care guidelines recommend screening for psychosocial factors and using evidence-based interventions to improve outcomes of people with T2DM) (Skinner et al.,2020; Chew et al., 2017), implementing these well-intentioned guidelines for psychosocial care strategies in low-income settings such as Zimbabwe is often difficult (Mogre et al., 2019).

Consequently, this study aimed to explore a more nuanced understanding of diabetes self-care in Zimbabwe, illustrating the barriers and enablers to integrating psychosocial support into diabetes care. One of the strengths of this intrinsic qualitative case study was its use of a triangulation strategy involving both methods and participant group perspectives to explore felt, expressed and comparative unmet psychosocial health-related needs of people with T2DM in Zimbabwe. Notably, participants with lived experience of T2DM identified a lack of psychological support within diabetes care services in Zimbabwe. Currently, there are no referral pathways to specialised mental health services nor are there integrated diabetes and mental health care services available. Additionally, people with T2DM expressed concerns about the potential impact of T2DM on their mental health was often dismissed by healthcare professionals whom they perceived as neither competent nor willing to provide the much-needed mental health support despite the patients verbalising their emotional distress.

Diabetes healthcare professionals' narratives from the study identified several structural barriers within the healthcare system that currently impede the formalised screening and integration of psychosocial aspects into diabetes care. These perceived barriers included the absence of a comprehensive national diabetes and mental care plan, a lack of psychosocial training and resources, insufficient facilities and mental health professionals, and a lack of referral pathways and integration of diabetes and mental health services. The findings of this study are consistent with previous qualitative research conducted predominantly in high-income countries (Hadjiconstantinou et al., 2020; McMorrow et al., 2022; Stoop, 2019), which similarly identified the complex psychosocial challenges associated with living with T2DM. However, this study extends the existing literature by providing context-specific insights from Zimbabwe, highlighting significant gaps in the recognition of T2DM comorbidities with mental health conditions and the limited integration of mental health services within diabetes care pathways. These findings are particularly important given the relative paucity of research in sub-Saharan Africa exploring the intersection between T2DM and mental health as well as culturally responsive models of chronic disease management such as within low-resource settings.

5.3 Lived experiences of diabetes self-care at community level of influence.

The findings of this study showed that community-level social-ecological model including social norms and cultural expectations, significantly influenced the lived experiences of diabetes self-care among people with T2DM in Zimbabwe, often leading to feelings of emotional distress.

As previous systematic literature reviews indicate, community interactions can complicate the ability of people with T2DM to adhere to dietary and lifestyle choices that align with diabetes selfcare recommendations (Molla et al., 2025; Suglo & Evans, 2020). Similarly, in this study, people with T2DM reported feeling pressured to attend social gatherings such as weddings and funerals. However, existing cultural expectations, as well as limited food options, were often felt to be misaligned with diabetes self-care guidelines. People with T2DM felt compelled to attend these occasions because of fear of judgment.

Additionally, existing gender role expectations within Zimbabwean society intensify feelings of emotional distress, with women with T2DM often expected to partake in the preparation of ceremonial foods. In contrast, men with T2DM were expected to consume alcohol. Some people with T2DM suggested that they compromised their diabetes self-care recommended to fit in socially, with most explaining their reluctance to request dietary accommodations at social gatherings as a way to avoid offending hosts, echoing the findings of Mukonka and colleagues (2016) who reported that people with T2DM struggled to adhere to diabetes-specific dietary practices at social events in Zimbabwe. Thus, this study expanded on previous findings by demonstrating how attending these social events may lead to experiences of unmet health-related social needs.

Firstly, people with T2DM perceived a lack of community awareness and structural support that would allow them to engage in social events while adhering to diabetes-friendly dietary habits and other self-care activities in Zimbabwe. Secondly, those with T2DM face challenges in balancing social expectations with their health priorities. Lastly, the social impact of T2DM and perceived unsupportive behaviours within the community may contribute to diabetes-related stigma, which involves negative feelings experienced by people with T2DM due to being stereotyped or blamed for their condition (Speight et al., 2024).This stigma is reported to arise from internal and external sources, such as the socially identifiable characteristics of T2DM, including the need for blood glucose monitoring and specific dietary requirements (Abdoli et al., 2018). These experiences of stigma highlight another psychological issue that coexists with T2DM, alongside depression and diabetes-related distress (Holmes-Truscott et al., 2020).

However, there is limited research on the experiences of diabetes-related stigma in sub-Saharan Africa, including Zimbabwe (Akyirem and Ekpor, 2023; Botchway, 2021). This study offered unique contextual insights into how misconceptions about T2DM may intersect with existing socio-cultural norms, leading to experiences of stigma in Zimbabwe. This intrinsic case study thus contributes to the literature by emphasising how existing sociocultural norms and gender role expectations in Zimbabwe may influence diabetes self-care, resulting in experiences of diabetes-related stigma and social isolation, which point to another driver of emotional distress.

5.4 Lived experiences of diabetes self-care at the intrapersonal level of influence.

The social ecological model at this level sheds light on how people with T2DM interact with their social networks as part of their lived experience of diabetes self-care in Zimbabwe (Newton-John 2017). Understanding the experiences of perceived social support and quality of interactions within social ties in sub-Saharan African countries, such as Zimbabwe, is crucial due to the paucity of data (Molla et al., 2025).

A previous study (Hjelm & Mufunda, 2010) reported that people with T2DM in Zimbabwe primarily received tangible and emotional support from their family members including financial aid for food, diabetes medications, and blood glucose monitoring equipment, along with assistance in meal preparation and emotional encouragement. Similarly, this current study illustrated that people with

T2DM's spouses, children, and extended family members were integral to their lived experiences of diabetes self-care in Zimbabwe. These social connections provided social capital that significantly influenced the lived experience of self-care with people with T2DM who received tangible support with diabetes self-care activities such as meal planning, medication reminders, and blood glucose monitoring. They also mentioned receiving financial support and informational guidance, including encouragement to incorporate herbal treatments into diabetes management. This narrative suggests that herbs may be widely accepted within Zimbabwean society, as is commonly reported in other African countries (Molla et al., 2025).

Given the persistent supply chain issues in accessing diabetes medications, supplies, and blood glucose monitoring devices in Zimbabwe, some people with T2DM relied on ongoing support from relatives in the diaspora, who became a dependable source of financial help and essential diabetes supplies. This study builds on previous research in Zimbabwe by highlighting how diaspora-based members of the social networks of people with T2DM serve as a vital source of social capital. They help bridge gaps in the healthcare system, particularly in Zimbabwe, where formal support systems for people with T2DM are limited (Taslakian et al., 2021; Schram et al., 2021).

Furthermore, this study highlighted significant gender differences in the perceived type and quality of support received by people with T2DM in Zimbabwe, consistent with existing literature (Albanese et al., 2019; Mendenhall et al., 2015; Mwila et al., 2019).

In this study, men with T2DM reported receiving tangible and emotional support from spouses and adult children, which they felt enhanced their experiences of diabetes self-care. In contrast, the experiences of women with T2DM were mixed. While some married women with T2DM appreciated the support from their spouses and children, others described ongoing interpersonal conflicts, particularly with their spouses, that served as barriers to effective diabetes self-care and contributed to emotional distress. Also, the loss of spousal support for some widowed women with T2DM was perceived to compound the difficulties of diabetes self-care due to the absence of critical instrumental, financial, and emotional support.

Therefore, this study makes a unique contribution to the limited literature on the gendered experiences of diabetes self-care in Zimbabwe by highlighting how gender norms and marital status may intersect to influence the type and level of support received by men and women with T2DM. Men often receive the necessary tangible and emotional support. At the same time, some women, particularly those who are widowed or in conflictual marital relationships, may have limited access to instrumental or emotional support. This study reported that gendered experiences of diabetes self-care appear to extend the social ecological model interpersonal level of influence, as they are rooted in social gender norms and expectations that shape caregiving and financial dependency in Zimbabwe.

5.5 Lived experiences of diabetes self-care at the interpersonal level of Influence.

At the core of the social ecological model interpersonal are individual factors that can influence the mental wellbeing and health behaviours of people with T2DM. These intrapersonal-level factors may be controllable, such as diabetes self-efficacy, health beliefs, illness perceptions, coping style, and health literacy, or uncontrollable, like socioeconomic status, employment status, income, T2DM, and its comorbidity with depression and diabetes-related distress, all of which may converge to impact diabetes self-care (Adu et al., 2019; Widyastari et al, 2020).

While the qualitative study by Hjelm and Mufunda (2010) highlighted cultural and religious beliefs as potential barriers to diabetes self-care in Zimbabwe, the current study extends their findings by revealing additional individual-level factors that contribute to these barriers. These include perceived socioeconomic status, gender, gender roles expectations, employment status, marital status, and the experiences of people with T2DM regarding depression, chronic stress, diabetes-related distress, and their coping mechanisms, all of which shape the lived experience of diabetes self-care while pointing to possible unmet psychosocial health-related needs (Fisher et al., 2024; Gonzalez et al., 2016).

5.5.1 Perceived socio-economic status and its role in diabetes self-care experiences.

In the current study participants narratives centred on the perceived impact of subjective socio-economic status on diabetes self-care. Interestingly, people with T2DM reported experiencing diabetes-related food insecurity in agreement with the few quantitative studies identified on this area (Cheng et al., 2013; Nsimbo et al., 2021; Rodriguez et al., 2019) suggesting that diabetes-related food insecurity is a common and largely unrecognised challenge among people with T2DM in Zimbabwe. Therefore, this study expanded this literature by offering qualitative insights into the contextual factors influencing diabetes-related food insecurity in Zimbabwe, while highlighting a critical unmet health-related social need.

5.5.2 Emotional toll of living with T2DM

Wilson (2022) argues that the diagnosis of T2DM impacts not only physical health but also significantly affects mental well-being. The narratives from the study participants offered a complex depiction of experiences of emotional distress among people with T2DM and its potential sources in Zimbabwe. Existing literature (Huang et al., 2020; Orben et al., 2022; Zhang et al., 2018) identified similar potential sources of emotional distress, such as unrecognised T2DM, comorbidity with mental health conditions, emotional burnout, perceived burdens of multicomponent diabetes treatment, diabetes specific interpersonal conflict, and unmet health-related social needs.

However, studies conducted in low- to middle-income countries have highlighted upstream social determinants of health factors, including healthcare funding, poverty, and food insecurity, as significant contributors to emotional distress (Mendenhall et al., 2015; Mwila et al., 2019; Vicente et al., 2019). Collectively, the findings of this current study suggest shared themes that align with previous research, particularly regarding experiences of emotional burnout, burden of diabetes self-care, fear of T2DM complications and death, diabetes-specific interpersonal conflicts and unmet psychosocial health-related needs that shape the lived experience of diabetes self-care. Nonetheless this current study offers unique contextual insights from Zimbabwe.

Firstly, a distinct insight from this study, compared to prior qualitative research on the topic (Liu et al., 2020; Mendenhall et al., 2015; Mwila et al., 2019), is that some individuals with T2DM reported experiencing mood swings linked to perceived fluctuations in blood glucose levels aligning this findings of Muijis et al. (2021). While Muijis and colleagues (2021) noted that people with T2DM often perceive blood glucose variability as influencing emotional well-being, it may also suggest that individuals with T2DM in Zimbabwe articulate their emotional struggles using culturally accepted narratives. As Kleinman (2020) argues, individuals from different cultural contexts may express their mental health conditions in ways shaped by their sociocultural environment.

This study contributes to the literature in this field by offering key insights. Firstly, the triangulated perspectives of individuals with both lived and professional experience of T2DM reveal that comorbid mental health issues are not only overlooked within the healthcare system but also stigmatised and culturally silenced in Zimbabwe society, extending the findings from prior studies (Liu et al., 2022; Mwila et al., 2019) within low-income settings.

However, this study makes a unique contribution by identifying sexual and intimacy related emotional distress as a culturally sensitive source of emotional distress among individuals with T2DM in Zimbabwe. The emotional distress arose from the impact of T2DM on sexual health, including conditions such as erectile dysfunction and vaginal infections, as well as associated marital conflicts. This theme has been infrequently addressed in previous studies conducted in low to middle-income countries contexts (Gonzalez et al., 2019).

Finally, financial hardship has been recognised as a source of emotional distress among individuals with T2DM (Levy et al., 2022), this study extended on the existing literature by contextualising these sources of emotional distress within Zimbabwe's fragile socioeconomic and health systems, which is marked by insufficient economic and social protection mechanisms. Also, this study identified gender role expectations, especially financial dependency among women with T2DM, societal ideal may discourage illness disclosure heightening the experiences of emotional distress. Notably, patients with T2DM in Zimbabwe were reported to employ various coping mechanisms, including cost-related non-adherence behaviours, traditional religious coping include use of herbs, acceptance, and seeking financial support from social networks. While the findings of this study are aligned with Lazarus and Folkman's (1984) coping theory, which posits that individuals use both problem- and emotion-focused strategies in response to stress. Emotion-focused coping aim to manage emotional responses, whereas problem-focused coping addresses the stressors themselves (Bouchard et al., 2004), this area appears underexplored in identified qualitative studies within LMICS (Liu et al., 2022; Mwila et al., 2019). Therefore, this study highlighted the contextual realities of emotional distress that people with T2DM may experience in Zimbabwe, emphasising both diabetes-related and non-diabetes related sources of emotional distress (Polonsky et al., 2022).

5.6. Intersectional perspectives on the lived experiences of diabetes self-care.

Previous research has rarely employed an intersectionality framework to explore how multiple social identities, beyond socioeconomic status or gender may influence the lived experience of diabetes self-care among individuals with T2DM (Jones et al., 2021; Naqvi et al., 2020). Intersectionality is a theoretical framework first articulated by Kimberlé Crenshaw in 1989 and has since been used in public health research to illustrate how distinct multiple social identities within diverse sociocultural contexts contribute to health behaviours, such as diabetes selfcare (Abrams et al., 2020).

For example, a qualitative study by Jones and colleagues (2022) using the intersectionality lens reported that the convergence of multiple social identities, such as socioeconomic status, gender, age, race, or ethnicity, shaped the lived experience of diabetes. While this current study shared similar themes on key multiple social identities that may influence diabetes self-care, it provided unique insights on how socioeconomic status, access to employer-supported medical health insurance policies, marital status, gender and gender role expectations intersect, leading to varied lived experiences of diabetes self-care among people with T2DM in Zimbabwe. Therefore, this study identified critical aspects of diabetes self-care that may have remained hidden without drawing on the intersectional lens thereby advancing the application of intersectionality in diabetes public health research.

Firstly, the intersection of a T2DM diagnosis, gender, and gender role expectations, as underpinned by existing sociocultural norms, was perceived to result in differences in experiences of health-related social support. Consistent with existing literature (Mansyur, 2023), men with T2DM were reported to receive reliable spousal support as part of their diabetes self-care. In contrast, some of the women with T2DM described both supportive and unsupportive spousal relationships, with some partnerships enhancing and others impeding diabetes self-care. However, this study added to this area by highlighting how widowed women with T2DM felt particularly vulnerable because the absence of spousal support presented significant challenges to their diabetes self-care. Thus, this study illuminated gender-specific perceived health-related social support needs as possible barriers to diabetes self-care in Zimbabwe.

Secondly, people with T2DM, regardless of gender, were perceived as facing catastrophic out-of-pocket expenses related to their diabetes self-care in Zimbabwe. However, the financial burdens associated with diabetes were not uniformly experienced. For example, those with T2DM who had access to private medical health insurance viewed this access as a facilitator for diabetes self-care.

Conversely those people with T2DM without access to the medical insurance felt that the lack of financial protection was catastrophic, severely limiting their ability to manage their condition. Interestingly, access to medical health insurance was closely linked to the employment status of people with T2DM, making it a critical aspect of their social identity in Zimbabwe. However, reliance on employment-based health insurance in a setting like Zimbabwe, characterized by high unemployment and significant informal sector employment, may further disadvantage certain groups (International Labour Organisation, 2023; Vijayasingham et al., 2020).In this study, some women with T2DM who were financially dependent on their husbands, widowed, unemployed, or engaged in informal work indicated that the interplay between socio-economic status, gender, and labour market dynamics shaped their experience of diabetes self-care.

On the hand having access to employer-supported medical insurance, regardless of gender, was perceived to offering financial protections related to diabetes care costs. Thus, the theoretical implication of this study is that it extends intersectionality research within the diabetes care literature in sub-Saharan Africa, paving the way for identifying multiple social identities that influence the lived experience of diabetes self-care.

5.7 Summary of Thesis Findings

The conclusion of this study addressed the overarching research questions that guided this study.

Research Question 1: How do people aged 18–64 years living with T2DM in Zimbabwe describe their experiences of diabetes self-care?

People with T2DM in this study were facing multifaceted challenges due to factors at social ecological model’s societal and public policy level of influence as part of their lived experiences of diabetes self-care. A central theme was experiences of severe financial hardship, which significantly impacted their ability to manage their condition especially diabetes-specific food insecurity and systemic healthcare barriers, such as the high cost of medications, diagnostic services, and follow-up care. In response, some people with T2DM adopted cost-related non-adherence and use of traditional herbs as coping strategies.

Secondly, people with T2DM highlighted the lack of prioritisation for diabetes care by both the Government of Zimbabwe and international donor agencies. Through explicit comparisons, they illustrated how vertical programs for communicable diseases like human deficiency virus/AIDS, malaria, and tuberculosis received more attention and funding, thereby creating a health policy environment that neglects non-communicable diseases such as T2DM and mental health. Taken together the lived experience of diabetes self-care in Zimbabwe was shaped by the of lack of positive macroeconomic and public health policies that prioritised T2DM and mental health conditions as public health issues.

At the social ecological model's interpersonal levels of influence, people with T2DM reportedly received tangible, emotional, and informational support from immediate family members, spouses, diaspora-based relatives, and peers. However, gender differences emerged in how this support was experienced. Some women with T2DM, particularly those who were widowed or facing marital conflicts, were vulnerable due to a lack of spousal support as part of their lived experiences in diabetes self-care. In contrast, all men with T2DM in this study reported receiving consistent support from their spouses. This highlights how gender and gender roles may intersect with existing societal norms in Zimbabwe, leading to differences in the lived experiences of diabetes self-care.

At the social ecological model's intrapersonal levels of influence, the lived experiences of diabetes self-care among people with T2DM in Zimbabwe were reportedly shaped by multiple social identities, including perceived socio-economic status, gender, and intersection with employment status. With access to employer-based medical insurance as the primary form of health coverage in Zimbabwe, this study further highlighted the existence of health inequalities in access to diabetes care. Additionally, people with T2DM commonly faced mental health conditions such as depressive symptoms, mood swings, anxiety, diabetes-related distress and diabetes-related stigma. They also reported experiencing diabetes-related stigma related to a T2DM diagnosis particularly at the intrapersonal, community, and social levels, where feelings of being judged or misunderstood were prevalent.

Research Question 2: How can the views and perspectives of people living with T2DM, caregivers, diabetes advocates and healthcare professionals contribute to understanding the psychosocial health-related needs of people with T2DM in Zimbabwe?

Psychosocial health-related needs encompass both psychological and social health-related needs (Alder et al., 2008). This study identified several key psychosocial health-related needs by triangulating the perspectives of the participants.

5.7.1 Perceived Health-Related Social Needs

The participants' diverse perspectives shed light on numerous social factors that influence diabetes self-care among people with T2DM in Zimbabwe. Firstly, there was a consensus on the identified gaps at the macroeconomic and public health policy levels, which failed to adequately address the needs of people with T2DM. Unlike other chronic conditions such as human immunodeficiency virus/AIDS, diabetes care lacked subsidies, making it financially burdensome in Zimbabwe. Moreover, existing structural barriers within Zimbabwe's healthcare system, including the user-fee funding model, unregulated insurance markets, fragmented healthcare systems, and an erratic supply of essential diabetes medications and supplies were reported to adversely affect diabetes self-care.

Secondly, the lack of support for diabetes self-care at both healthcare and interpersonal levels was experienced differently, with some women with T2DM being particularly vulnerable due to insufficient emotional and practical support from their spouses and relatives. Finally, individuals with T2DM felt stigmatised, especially at social events, and their need for mental health support was often dismissed by healthcare professionals, making it difficult for them to disclose mental health issues within diabetes care services.

5.7.2 Psychological Health-Related Needs

The study participants also identified significant unmet psychological health related needs within diabetes care in Zimbabwe. Self-identified caregivers recognised that people with T2DM struggled to adopt recommended lifestyle changes, particularly regarding diet and physical activity, yet received little psychological support from healthcare professionals during this adjustment phase. Furthermore, study participants with lived experience of T2DM in Zimbabwe believed that healthcare professionals overlooked the impact of the economic burden on diabetes self-care, as their messages primarily emphasised achieving diabetes targets and promoting self-care compliance. Additionally, people with T2DM may face sexual and intimacy conflicts due to the impact of T2DM on sexual health. However, these diabetes-related sexual or relationship intimacy conflicts remained largely unrecognised and unaddressed at healthcare levels.

The study participants highlighted that T2DM, along with its comorbidities, such as depressive symptoms and diabetes-related distress, negatively impacted diabetes self-care. However, there was a divergence in perspectives those with lived experience of T2DM believed that healthcare professionals were unable to identify or treat mental health conditions within diabetes services in Zimbabwe. Conversely, diabetes healthcare professionals in this study asserted that they could recognise mental health conditions such as depression or diabetes-related distress during clinic visits. Nonetheless, they acknowledged several structural barriers within the Zimbabwe healthcare system, such as limited training, lack of multidisciplinary teams, inadequate referral mechanisms to mental health or peer support groups, and the absence of mental health integration within diabetes care, which meant the identified psychological issues went unaddressed.

5.8 Methodological Contributions

This study employed an intrinsic qualitative case study methodology, enabling a thorough exploration of the lived experience of diabetes self-care and the identification of key psychosocial health-related needs among people with T2DM in Zimbabwe. A notable strength of this study lies in its multi-perspective data collection strategy, which included semi-structured in-depth interviews with people with T2DM and focus group discussions with self-identified caregivers, unpaid diabetes advocates, and diabetes healthcare professionals. This approach allowed for the triangulation of perspectives from those with lived and professional experience of T2DM in Zimbabwe.

The use of data triangulation strategy as advocated by Denzin and colleagues (2018), enhanced the credibility of the findings by identifying convergent, complementary, dissonant, and silent themes across participant narratives, thereby providing a comprehensive exploration of diabetes self-care practices and the psychosocial needs of people with T2DM in Zimbabwe. This methodological choice addressed key methodological and population research gaps within low- to middle-income countries where only six qualitative studies were identified as part of the integrative review as summarised in Chapter 2.

Therefore, by situating diabetes self-care within Zimbabwe's broader socio-economic, cultural, and healthcare environment, the study produced rich, context-specific insights that quantitative studies may not reveal. Additionally, the use of an intrinsic qualitative case study methodology was particularly advantageous in highlighting the uniqueness of the case 'Zimbabwe', as bounded by seismic shifts at macro-socioeconomic, public health policy and healthcare funding mechanisms over the past four decades while demonstrating the nuanced complexity of individual and systemic barriers and enablers to psychosocial care among people with T2DM.However, the study's methodological contributions extend beyond addressing the methodology identified in Chapter 2 as it also offered context-specific, actionable insights that stakeholders in diabetes services in Zimbabwe may use to urgently respond to unmet psychosocial health-related needs as part of person-centred diabetes care.

5.9 Contributions to Knowledge and Theory

This study provides a comprehensive understanding of the impact of social determinants of health and their intersection with social identities as important factors that shaped the lived experience of diabetes self-care among people with T2DM in Zimbabwe, using a theoretical framework informed by both the Socioecological Model and Intersectionality Framework. By integrating these frameworks, this research offered a novel theoretical lens for examining diabetes self-care in a resource-constrained and culturally specific setting such as Zimbabwe.

The Socio-ecological Model provided a framework for understanding the psychosocial health-related needs of people with T2DM within their specific environments (Townsend & Foster, 2013), while emphasising the dynamic interplay among various levels of influence (individual, interpersonal, community, organisational, and policy) and their impact on diabetes self-care in Zimbabwe. The social ecological model is widely used in public health to address complex issues such as the lived experience of diabetes self-care and diabetes-related distress (Caperon et al., 2019; Farnoudi et al., 2022).

In the context of this study, social ecological model provided a structured approach to identifying and uncovering the complex, multifactorial factors shaping the lived experience of diabetes self-care in Zimbabwe, including cultural beliefs, economic constraints, healthcare infrastructure, healthcare funding, and public policy gaps. However, while social ecological model is effective in capturing barriers and enablers to diabetes self-care at the five levels of influence recent scholarship on health inequalities has emphasised the need to consider how multiple social identities (e.g. gender, socio-economic status, and employment status) may intersect with wider social determinant of health to shape health behaviours such as diabetes self-care in a context (Jones et al., 2020).

Thus, the Intersectionality Framework (Crenshaw, 1989) provided a critical lens to understand how these multiple social identities interact synergistically to influence diabetes self-care practices in Zimbabwe. The intersectionality framework illuminated how different social groups experience diabetes self-care differently due to the existing gaps in public health policies, sociocultural norms, and T2DM comorbidity with mental health conditions such as depression. Consequently, by combining social ecological model and intersectionality framework this study advanced the understanding of diabetes self-care in a disadvantaged setting. As a result, it offered a comprehensive and context sensitive approach to exploring the nuanced lived experience of diabetes self-care and the impact of social determinants of health on T2DM in Zimbabwe. Furthermore, this study theoretical framework helped explore how people with T2DM navigated diabetes self-care in a low-income setting revealing numerous psychosocial barriers that shape their lived experiences.

Study findings indicated that gender, gender roles expectations, socio-economic status, and employment status significantly influenced diabetes self-care while intersecting with broader social determinants of health such as the absence of a national diabetes policy, lack of dedicated diabetes funding, and patriarchal norms in Zimbabwe. Additionally, existing sociocultural views regarding mental health and expectations at gatherings were perceived as emotionally distressing as people with T2DM felt stigmatised further contributed to the experiences of diabetes-related stigma.

However, the combined socioecological model and intersectionality framework used in this study may not fully capture how the existing socio-economic environment, T2DM diagnosis, and its comorbidity with mental health conditions such as depressive symptoms or diabetes-related distress may influence the lived experience of diabetes self-care through diabetes coping (McCoy et al., 2019). For instance, people with T2DM in Zimbabwe were reportedly using adaptive and maladaptive coping strategies, including cost-related nonadherence behaviours such as rationing or skipping of medication due to financial constraints.

Similarly, the substitution of biomedical treatment with traditional herbal remedies reflected financial constrained informed choice. At the same time some were reliant on their social networks to secure diabetes supplies suggesting there may be a role of informal healthcare funding pathways withing chronic disease management such as T2DM in low-resource settings such as Zimbabwe. In conclusion, this study's nuanced theoretical framework allowed for bridging public health theory with real-world experiences of diabetes self-care in Zimbabwe.

5.10 Strengths and Limitations of the Research

This qualitative intrinsic case study employed multiple perspective data collection and the triangulation of perspectives during data analysis, allowing key stakeholders voices (i.e. lived experiences and professional experience of T2DM) to illuminate the perceived psychosocial health-related needs of people with T2DM in Zimbabwe.

One of main strengths of this intrinsic methodology facilitated detailed, thick descriptions of the lived experiences of diabetes self-care and the contextual factors shaping these experiences in Zimbabwe while enhancing the study's depth and potential applicability to other settings (Lincoln & Guba, 1985). Given the scarcity of qualitative research that address the psychosocial aspects of T2DM within low income countries this study laid an important foundation for future research by identifying key themes and patterns relevant to diabetes self-care in Zimbabwe (Stakes,1995).

However, this study has several limitations:

5.10.1. Transferability of Findings

While the use of the intrinsic case study approach allowed for the in-depth exploration of the unique contextual factors underpinning the lived experience of diabetes self-care in Zimbabwe its transferability to other settings may be limited because of factors such as availability of public health policies and different models of healthcare funding. Nevertheless, this study findings provided detailed descriptions of participants' experiences, allowing researchers in similar socioeconomic and healthcare contexts to assess the study's relevance and applicability to their own context (Priya, 2021).

5.10.2. Recruitment and Participant Representation

Participants were mainly recruited via the assistance of a gatekeeper affiliated with the Zimbabwe Diabetes Association which may have led to a bias towards individuals engaged with formal diabetes support structures. Consequently, a snowball sampling technique was adopted which resulted in the recruitment of additional participants. However, the perspectives of those without affiliation with formal and informal peer support groups may still be underrepresented.

5.10.3. Impact of COVID-19 on data collection

The study was conducted during the COVID-19 pandemic, necessitating a flexible, multi-modal data collection approach that included telephone, Zoom, Microsoft Teams, and face-to-face interviews. Only three participants with T2DM opted for face to face in-person semi-structured in-depth interviews, which may have biased the sample towards individuals who were more technologically adept and had reliable internet access, potentially excluding economically disadvantaged groups. Also, due to electricity and internet reliability issues, only one focus group was conducted via Microsoft Teams, and the other two were conducted via telephone conferencing.

Despite potential communication barriers, data analysis did not reveal notable differences between responses collected through different mediums. An advantage of remote data collection was the inclusion of participants from diverse geographical regions of Zimbabwe, broadening the study's scope. Nonetheless, to the best of my knowledge, study findings may have captured the experience diabetes self-care during an on-going global pandemic.

5.11 Researcher Positionality

As an insider–outsider researcher (Milligan, 2016), my multiple intersecting social identities including being a Zimbabwean diaspora member, middle class, female, and affiliated with a foreign university may have influenced all stages of this research including recruitment and data collection stages. Notably, there was lack of interest from males' participation in focus group discussions. Also, during the in-depth interviews, I felt often struggled because of existing cultural taboos to probe some of the highlighted T2DM related sexual or intimate relationship distress which may have restricted insights into these perspectives on diabetes self-care in Zimbabwe. Continuous reflexivity (Braun & Clarke, 2022) was employed throughout the research process to acknowledge and mitigate potential biases related to researcher positionality.

5.12 Summary of key contributions of this study

The study used a qualitative intrinsic case study approach and delineated the contextual psychosocial barriers and enablers for diabetes self-management in Zimbabwe, giving a voice to people with both lived and professional experience of T2DM, drawing of social ecological model levels of influence and intersectionality framework.

- **Contextualising Self-Care in Zimbabwe**: This study provided a country specific perspective, highlighting Zimbabwe's unique socio-economic environment challenges, such as economic hardships, fragmented healthcare, and limited diabetes policy support, and how these underpin the lived experiences of diabetes self-care and drive experiences of unmet health-related social needs at Societal and Policy level of the social ecological model.

- **The intersection of social determinants and social identity**: Unlike many studies that address social determinants of health and social identity separately, this research demonstrates how their intersection (e.g. socioeconomic status, employment, marital status, gender, and gender roles) shaped diabetes self-care and mental well-being of people living with T2DM in low-resource settings such as Zimbabwe.
- **T2DM Comorbid with mental health conditions**: The study reinforced and extended on the global evidence on the occurrence of T2DM with mental health conditions and diabetes-related distress among people with T2DM and how the comorbidity is largely unrecognised by healthcare professionals. Additionally, this study uniquely contributed to this area by capturing subjective experiences of mood swings linked to blood sugar fluctuations experienced within the context of Zimbabwe and their influence at the intrapersonal level of people with T2DM.
- **Stigma and social norms**: While diabetes-related stigma has been studied in high-income countries, this research provides new insights into how diabetes-related stigma may manifest at the intrapersonal, interpersonal and community levels within Zimbabwe’s context and negatively impact diabetes self-care.

- **Emotional distress and personal relationship dynamics:** The findings expand on existing literature by illustrating how unresolved conflicts with healthcare professionals and spouses at the organisational and interpersonal level of social ecological model may contribute to emotional distress, further complicating diabetes self-care.

5.13 Recommendation for Policy and Practice

This study identified several unmet psychosocial health-related needs of people with T2DM in Zimbabwe and proposed interventions to overcome obstacles in diabetes care. Targeting policymakers, the Zimbabwe Diabetes Association, patient support groups, and the healthcare system, these suggestions delineate key improvement areas and offer precise proposals.

5.13.1. Public Health Policy Levels Recommendations

The Government of Zimbabwe policies should be expanded to provide funding and financial assistance for the treatment of non-communicable diseases, including T2DM, similar to the support given to communicable diseases such as human deficiency virus/AIDS tuberculosis, malaria to alleviate prohibitive costs and enhance access to essential diabetes treatments.

- The government should address the epidemiological data gaps on the incidence and prevalence of T2DM for informed decision-making.
- The government should work with health insurance companies to provide adequate coverage for diabetes treatment, supplies, and mental health services, offering protection from out-of-pocket costs.
- Explore community financing options, including leveraging the diaspora community to cover gaps in non-communicable disease funding.

5.13.2 Healthcare Organisation level recommendations

- Integrate care systems for non-communicable diseases (including diabetes and mental health) and communicable diseases within primary care.

- Deliver patient-centred care that addresses the psychosocial aspects of T2DM including screening for depression and diabetes-related distress as part of diabetes care.
- Implement culturally appropriate diabetes care that incorporates traditional and biomedical practices while maintaining effective diabetes management strategies.
- Diabetes care services should promote gender-specific social support experiences as part of diabetes self-care.

5.13.3 Community Level Recommendations

- Zimbabwe Diabetes Association must collaborate with key stakeholders, including governmental bodies, local and international donor communities, to promote and support public health policy initiatives aimed at improving the health outcomes of individuals with diabetes in Zimbabwe.
- Spearhead public awareness campaigns on diabetes, including T2DM and mental health to facilitate earlier screening and diagnosis and address misinformation, use of language and stigma.
- Provide psychosocial support to all people with diabetes in Zimbabwe, regardless of geographical location, without requiring a membership fee.

5.14 Recommendations for future studies

While this study mainly focused on the perceived psychosocial health-related needs that influence the lived experiences of diabetes self-care among people with T2DM in Zimbabwe, the issue of diabetes-related stigma remains a critical psychosocial aspect which is an underexplored area globally. The stigma associated with chronic conditions such as T2DM can significantly impact the emotional well-being of people with diabetes and impede diabetes self-care. Future diabetes research in Zimbabwe should prioritise understanding the gender-specific experiences of diabetes-related stigma, as men and women may perceive, experience, and respond to diabetes-related stigma in distinct ways. Exploring culturally embedded beliefs and societal attitudes that contribute to diabetes-related stigma could inform gender-sensitive, targeted interventions to mitigate psychosocial impacts of T2DM in Zimbabwe.

5.15 Conclusion

This study explored the views, perceptions, and experiences of diabetes self-care in Zimbabwe through the voices of individuals with lived and professional experiences of T2DM in Zimbabwe. The participants' voices, perspectives, and lived experiences provided significant insights into the psychosocial barriers and enablers of diabetes self-care in Zimbabwe while also illuminating the unmet psychosocial health-related needs of people with T2DM.

Firstly, having work-based health insurance was perceived to act as an enabling factor for diabetes self-care; however, many insurance plans did not cover essential diabetes drugs and supplies, with people with T2DM experiencing out-of-pocket payments regardless of their insurance status pointing to unmet health-related social needs.

Secondly, the lived experience of diabetes social support was not experienced uniformly, with noticeable gender differences pointing to unmet health-related social needs. Nonetheless, family, diaspora-based social network members and peer support groups were perceived to provide practical and emotional support for successful engagement in diabetes self-care in Zimbabwe.

Thirdly, the lived experiences of diabetes self-care were influenced by experiences of poor social determinants due to the lack of a public health policy that prioritised non-communicable diseases, including T2DM and mental health condition. Additionally, there is a lack of universal healthcare coverage in Zimbabwe, highlighting unmet health-related social needs at the policy level. Finally, the people with T2DM were experiencing emotional distress due to T2DM-specific and non-diabetes factors, which were unrecognised and addressed, pointing to unmet psychological health-related needs.

Consequently, this thesis, as discussed above, may serve as a useful guide for key stakeholders in Zimbabwe, including the Government, the Ministry of Health and Child Welfare, diabetes support organisations, healthcare providers, and public health researchers, in developing integrated care models that address non-communicable and communicable diseases.

By incorporating psychosocial aspects of diabetes care, these approaches can improve diabetes and mental health outcomes and reduce persistent inequalities in diabetes healthcare access. Finally, the findings of this thesis may be relevant to policymakers in other low-income countries facing challenges in providing diabetes mellitus, mental health care, and communicable disease services in settings without universal healthcare coverage.

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Appendices

Appendix 1: Framing of the Review Question – Using PICo format.

P	Population	Adults aged over 18 years living with T2DM
I	Phenomena of Interest	Relationship between depression, social support, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence). Relationship between depression, self-efficacy, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence). Relationship between diabetes, social support, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence). Relationship between diabetes distress, self-efficacy, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence).
		Relationship between depression, diabetes distress, social support, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence). Relationship between depression, diabetes distress, self-efficacy, and diabetes self-care (diet, exercise, foot care, blood glucose testing, and medication adherence).

		Relationship between depression, diabetes distress, self-efficacy, social support, and diabetes self-care behaviours (diet, exercise, foot care, blood glucose testing, and medication adherence).
Co	**Context**	Low- to middle-income countries, as defined by the Organisation for Economic Co-operation and Development's 2023 classification.

Appendix 2: Table of Low to Upper Middle-Income Countries

Low-Income Countries	Afghanistan, Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, South Sudan, Sudan, Togo, Uganda, Yemen
Lower-Middle-Income Countries	Angola, Bangladesh, Benin, Cambodia, Cameroon, Comoros, Côte d'Ivoire, Djibouti, Egypt, Ghana, Haiti, India, Kenya, Kyrgyzstan, Lao PDR, Lesotho, Mauritania, Mongolia, Morocco, Myanmar, Nepal, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Philippines, Senegal, Sri Lanka, Tanzania, Tunisia, Ukraine, Uzbekistan, Viet Nam, Zambia, Zimbabwe
Upper-Middle-Income Countries	Albania, Argentina, Armenia, Azerbaijan, Belarus, Belize, Bosnia and Herzegovina, Botswana, Brazil, China, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Fiji, Gabon, Georgia, Guatemala, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Malaysia, Maldives, Mauritius, Mexico, Montenegro, Namibia, Panama, Paraguay, Peru, Serbia, South Africa, Thailand, Türkiye, Venezuela

Appendix 3: Literature Search

Medline hosted by EBSCOhost using broad key term search strategy, MESH 2025 headings, Title and Abstracts on from inception to 16/02/2025.

Search ID #	Search Terms	Hits
S1	(MH "Diabetes Mellitus, Type 2")	(145,664)
S2	(MH "Diabetes Mellitus, Type 2") OR TI (“diabet*" N3 ("type 2" OR "type2" OR "non-insulin" OR "noninsulin" OR "maturity onset" OR "maturity onset") OR AB ("diabet*" N3 ("type 2" OR "type2" OR "noninsulin" OR "noninsulin" OR "maturity onset" OR "maturity onset").	(204,634)
S3	(MH "Depression") OR (MH "Depressive Disorder") OR (MH "Major Depressive Disorder”).	(225,734)
S4	((MH "Depression") OR (MH "Depressive Disorder") OR (MH "Depressive Disorder, Major")) OR TI (depression" or "depressive disorder" or "depressive symptoms" or "major depressive disorder" or "major depression" or "mdd) OR AB (depression" or "depressive disorder" or "depressive symptoms" or "major depressive disorder" or "major depression" or "mdd).	(226,395)
S5	(MH “Psychological Distress")	(2,293)

S6	Distress") OR TI ("diabetes N3 (distress)" OR "diabetes distress" OR "diabetes-related distress" OR "diabetes related distress" OR "diabetes distress" OR "emotional distress" OR "negative emotional distress" OR "psychosocial aspects" OR "psychological distress") OR AB ("diabetes N3 (distress)" OR "diabetes distress" OR "diabetes-related distress" OR "diabetes related distress" OR "diabetes distress" OR "emotional distress" OR "negative emotional distress" OR psychosocial aspects" OR "psychological distress").	(33,542)
S7	(MH "Self-Efficacy") OR (MH "Self-Management").	(25,463)

S8	(MH "Self-Efficacy") OR (MH "Self-Management")) OR TI (“Self-Efficacy" OR "(self N3 efficacy)" OR "Self-Management" OR "(Self N3 management)" OR "(diabetes N3 efficacy)" OR "(diabetes N3 management)”) OR AB (“Self-Efficacy" OR "(self N3 efficacy)" OR "Self-Management" OR "(Self N3 management)" OR "(diabetes N3 efficacy)" OR "(diabetes N3 Management)”	(59,797)
S9	(MH "Psychosocial Support Systems")	(792)
S10	MH "Social Support")	(74,664)
S11	(MH "Social Network Analysis") OR (MH "Social Networking")	(4,435)

S13	(S9 OR S10 OR S11) OR TI ("social* " OR "communit*" OR "famil*" OR "peer*" OR "(Health N3 personnel*)" OR "(Health N3 Worker*) OR "(Health N3 professional*") OR AB ("social* " OR "communit*" OR "famil*" OR "peer*" OR "(Health N3 personnel*)" OR "(Health N3 Worker*) OR "(Health N3 professional*)"	(2,249,620)
S14	S1 OR S2	(204,634)
S15	S3 OR S4 OR S5 OR S6	(253,947)
S16	S7 OR S8	(2,285,050)
S17	S9 or S10 or S11	(79,175)
S18	S14 AND S15 AND S16 AND S17	(941)
S18	S14 AND S15 AND S16 AND S17 Limiters :Date of Publication: 19950101-20250221 English Language	920

Appendix 4: Selection Checklist

Screening at Title and Abstract Stage				
Points to Consider	YES	NO	Unclear	Notes
Is the study written in English?				Exclude if ‘No’
Is the study population people with T2DM?				Exclude if ‘No’; Include if ‘Unclear
Was the study conducted in countries as per Appendix 2?				Exclude if ‘No’
Does the study include depression, diabetes-related distress, and diabetes self-care (diet, exercise, foot care, glucose testing, and medication adherence) as outcomes of interest?				Exclude if ‘No’; Include if ‘Unclear
Does the study include views, perceptions, and lived experiences of diabetes selfcare and mental health conditions?				Exclude if ‘No’; Include if ‘Unclear
Overall decision	Include			Exclude

Appendix 5: Example of Data Reduction Grid

Authors	Country	Purpose of Study and Study Participants	Theoretical Conceptual Framework	Methodology	Outcome of finding	Critique and Analysis
Al-Dwaikat, T. N., Rababah, J. A., AlHammouri, M. M., & Chlebowy, D. O. (2021). Social support, self-efficacy, and psychological wellbeing of adults with Type 2 Diabetes. Western Journal of Nursing Research, 43(4), 288–297	Jordan	To examine the relationship between social support and psychological outcomes in adults with T2DM 339 participants aged 18 and older.	None	Analytical cross-sectional	Results showed a statistically significant effect of social support on diabetes self-efficacy	Correlational

Adopted from (Garrard, 2020)

Appendix 6: Ethics Approval FHMREC20194

Applicant: Nyaradzo Chada

Supervisor: Dr Faraz Ahmed and Dr Paula Holland

Department: DHR

FHMREC Reference: FHMREC20194

13 October 2021

Re: FHMREC20194

Psychosocial health needs of adults living with Type 2 Diabetes Mellitus, in Zimbabwe

Dear Nyaradzo,

Thank you for submitting your research ethics application for the above project for review by the Faculty of Health and Medicine Research Ethics Committee (FHMREC). The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for this research project.

As principal investigator, your responsibilities include:

- Ensuring that (where applicable) all the necessary legal and regulatory requirements to conduct the research are met, and the necessary licenses and approvals have been obtained.

- Reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g., unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress).
- Submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Email: fhmresearchsupport@lancaster.ac.uk

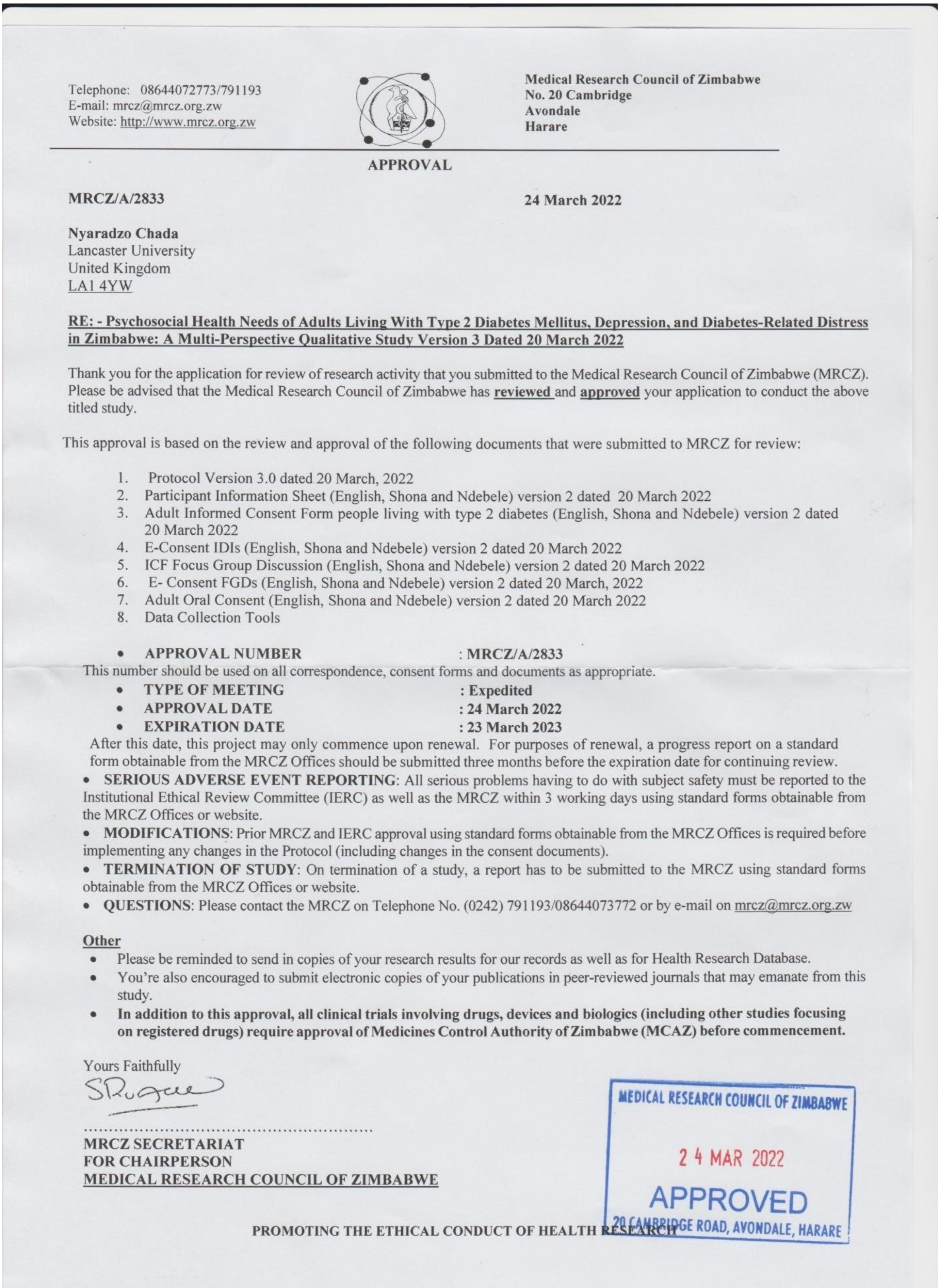
Yours sincerely,

T. Morley

Tom Morley,

Research Ethics Officer, Secretary to FHMRE

Appendix 8: Ethical Approval Medical Research Council Zimbabwe MRCZ/A/2833



Telephone: 08644072773/791193
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

Medical Research Council of Zimbabwe
No. 20 Cambridge
Avondale
Harare

APPROVAL

MRCZ/A/2833

24 March 2022

Nyaradzo Chada
Lancaster University
United Kingdom
LA1 4YW

RE: - Psychosocial Health Needs of Adults Living With Type 2 Diabetes Mellitus, Depression, and Diabetes-Related Distress in Zimbabwe: A Multi-Perspective Qualitative Study Version 3 Dated 20 March 2022

Thank you for the application for review of research activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:

1. Protocol Version 3.0 dated 20 March, 2022
2. Participant Information Sheet (English, Shona and Ndebele) version 2 dated 20 March 2022
3. Adult Informed Consent Form people living with type 2 diabetes (English, Shona and Ndebele) version 2 dated 20 March 2022
4. E-Consent IDIs (English, Shona and Ndebele) version 2 dated 20 March 2022
5. ICF Focus Group Discussion (English, Shona and Ndebele) version 2 dated 20 March 2022
6. E- Consent FGDs (English, Shona and Ndebele) version 2 dated 20 March, 2022
7. Adult Oral Consent (English, Shona and Ndebele) version 2 dated 20 March 2022
8. Data Collection Tools

- **APPROVAL NUMBER** : **MRCZ/A/2833**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING** : **Expedited**
- **APPROVAL DATE** : **24 March 2022**
- **EXPIRATION DATE** : **23 March 2023**

After this date, this project may only commence upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
- **MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (0242) 791193/08644073772 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- **In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement.**

Yours Faithfully

……………………………………………………

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
24 MAR 2022
APPROVED
20 CAMBRIDGE ROAD, AVONDALE, HARARE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

Appendix 7: Ethics Amendment – REAMS FHM-2022-0864

Sent: 28 April 2022, 15:19

To: Chada, Nyaradzo (Postgraduate Researcher)

<n.chada@lancaster.ac.uk>

Cc: Ahmed, Faraz <faraz.ahmed@lancaster.ac.uk>; Holland, Paula

<p.j.holland@lancaster.ac.uk>

Subject: [External] FHM-2022-0864-AmendPaper-2 Ethics approval of amendment

FHM-2022-0864-AmendPaper-2 Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe.

Dear Nyaradzo Chada,

Thank you for submitting your ethics amendment application in REAMS, Lancaster University's online ethics review system for research. The amendments have been approved by the FHM REC.

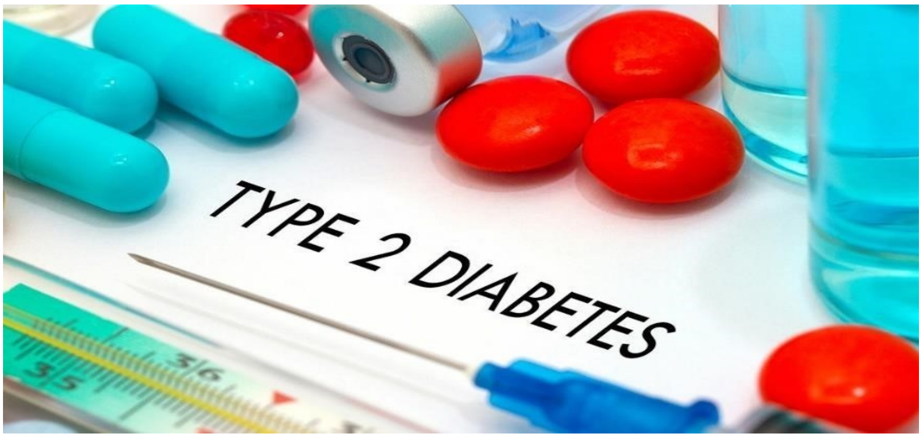
Yours sincerely,

Faculty Research Ethics Officer on behalf of FHM

Appendix 9: Study Advertisement Flyer in English

MRCZ/A/2833

Psychosocial Health Needs of Adults Living with T2DM in Zimbabwe.



Lancaster University PhD Student Research Project

Who can take part?

- ❖ Do you self-identify as an adult, and are you 18–64 years old?
- ❖ Have you been living with Type 2 Diabetes for more than 12 months?
- ❖ Do you self-identify as a caregiver to people with Type 2 Diabetes?

- ❖ Do you self-identify as a health care professional with a primary role in diabetes care and have worked in your current position for more than 12 months?
- ❖ Do you self-identify as a support group or peer leader/advocate for people living with diabetes and have worked in your current role for more than 12 months?

Then we would like to hear from you. For more information, please get in touch with the project team:

1. Email: **n.chada@lancaster.ac.uk**
2. Project mobile phone: **00263789019449 or 00263719517610 using WhatsApp call, message, text message, or voice call**).
3. The research team will get back and share the Participant Information Sheet to help you decide whether to participate.

Many Thanks.

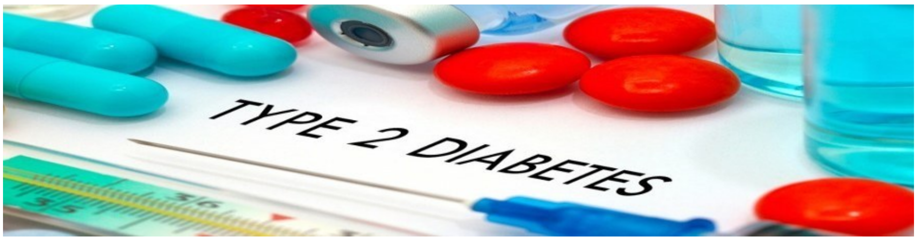
Nyaradzo Chada (PhD student in Public Health/Principal Investigator, Lancaster University).

Appendix 10: Study Flyer in Shona

MRCZ/A/2833

Tsvakurudzo yezveutano hwemupfungwa nemagariro evanhu vakuru vanorarama nechirwere cheshuga, kudzamisa ndangariro,

nekushushikana maringe nechirwere cheshuga Zimbabwe.



Tsvakurudzo yezvidzidzo zvePhD paLancaster University

Ndiyani anogona kupinda mutsvakurudzo?

- ❖ Urimunhu anganzi abva zera here, uye uinemakore aripakati pe18 ne64 ekuberekwa?
- ❖ Wava nenguva inodarika mwedzi gumi nemiviri (12) uchirarama nechirwere cheshuga (*Type 2 diabetes*) here?
- ❖ Ungave unemumwe wemumhuri menyu kana kuti shamwari inechirwere cheshuga here?
- ❖ Ungadaro urimushandi wezveutano anobatsira vanhu vanechirwere cheshuga kunyanya here, uye wava nenguva inodarika mwedzi gumi nemiviri (12) uchiita basa iri here?
- ❖ Ungadaro urimutungamiriri weboka kana chikwata chesimbiso chevanhu vanechirwere cheshuga here, uye wava nenguva inodarika mwedzi gumi nemiviri (12) uripachinzvimbo ichi here?

Kana wati hongu kunemumwe wemibvunzo iyi, tingade kukurukura newe kwazvo. Kuti uzive zvizere, bata chikwata chirikuita tsvakurudzo ino nekuchimbidza:

1. Pa-*email* inoti n.chada@lancaster.ac.uk.

2. Panhamba dzenhare dzinoti 00 263 789 019 449 Kana kuti 00 263 719 517 610 (Unogona kufona mbune, kufona kana kutumira meseji paWhatsApp, kanawo kutumira iriSMS).

3. Muchapiwa gwaro rinotsanangura zvese zvinofanira kuzikanwa nemunhu arikupinda mutsvakurudzo ino kuitira kuti muite sarudzo yenyu zvakanaka.

Tinotenda zvikuru

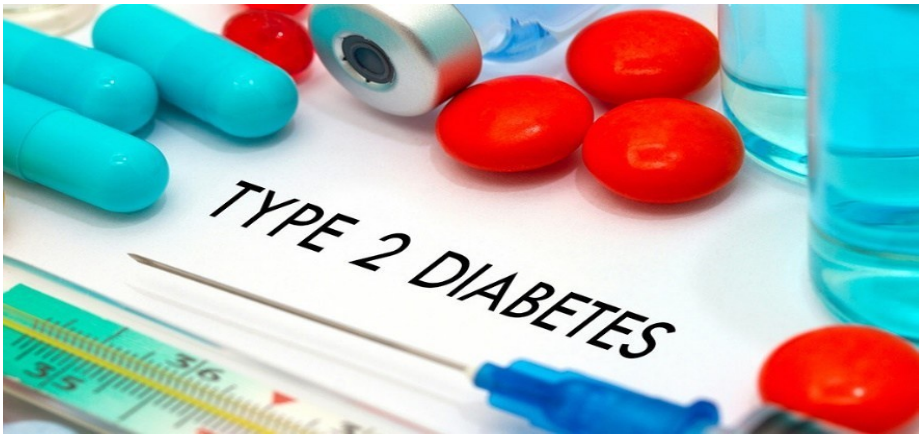
Nyaradzo Chada (Anoita zvidzidzo zvePhD/ Mutsvakurudzi mukuru kuLancaster University).

Appendix 11: Study Flyer in Ndebele

Health & Medicine | Lancaster University

MRCZ/A/2833

Isikhali sakuqala sendingisiso: Isimemezelo.Inhlolisiso yezempilakahle yasengqondweni lenhlalo yabantu abadala abalomkhuhlane wetshukela, uncindezi, kanye lokunye ukukhathazeka okuphathelane lokuba lomkhuhlane wetshukela eZimbabwe.



Indingisiso yezifundo zePhD eLancaster University

Ngubani ongaphatheka kuleyi ndingisiso?

- ❖ Ungabe mhlawumbe usungumuntu omdala na, oleminyaka ephakathi kwengu18 kusiya ku64 yokuzalwa?
- ❖ Usuphile ulomkhuhlane wetshukela (*Type 2 diabetes*) okwesikhathi esingadlula inyanga izilitshumi lambili (12) na?
- ❖ Ungabe ulelunga lomndeni wangini kumbe umngane obulawa yisifo setshukela na?
- ❖ Ungabe mhlawumbe uyisisebenzi sezempilakahle esiphatheke kakhulu ngokunakekela abantu abalomkhuhlane wetshukela na, njalo usulesikhathi esedlula inyanga ezilitshumi lambili (12) usenza lowo msebenzi na?
- ❖ Ungabe na ulesikhundla sokukhokhela iqembu losekelo kumbe abantu bentanga yakho ababulawa yisifo setshukela,

njalo usuhlezi kulesi sikhundla okwesikhathi esedlula inyanga ezilitshumi lambili na?

Nxa uthe yebo komunye wemibuzo le, singathanda kakhulu ukuxoxisana lawe. Ukuze wazi okugcweleyo, sicela uthinte iqembu eliqhuba indingisiso le:

1. Ku-*email* ethi **n.chada@lancaster.ac.uk**

2. Inombolo zocingo zithi **+263 789 019 449** loba **+263 719 517 610** (lingafona mahala, lifone ngqo, lithumele umlayezo kuWhatsApp, loba lithumele iSMS).

3. Lizanikwa iphepha elichaza ngokuningiliziweyo konke okufanele kwaziwe ngumuntu ofuna ukungena kulolucwaningo, ukuze likwazi ukuthatha isinqumo senu lilolwazi olwanele

Siyabonga kakhulu.

Nyaradzo Chada Umfundi wePhD / Umcwaningi Omkhulu Lancaster University.

Appendix 12: Participant Information Sheet

MRCZ/A/2833

Title of Study – Psychosocial Health Needs of Adults Living with Type 2

Diabetes Mellitus in Zimbabwe. A qualitative intrinsic case study.

Researcher: My name is Nyaradzo Chada, and I am conducting this research as a PhD student in the Public Health programme at Lancaster University, United Kingdom.

What is the study about?

The purpose of this study is to understand the shared experiences of people living with Type 2 Diabetes Mellitus and co-morbid depression or diabetes related distress, along with their social networks (family and friends), support group leaders, and healthcare professionals, in relation to psychosocial health needs in Zimbabwe.

Why have I been approached?

You have been approached because the study seeks information from people living with Type 2 diabetes, their family members and friends, diabetes patient support group leaders, and healthcare professionals, to share both lived and professional experiences of diabetes self-care in Zimbabwe.

Do I have to take part?

No. Participation is entirely voluntary. Please note:

1. *You may withdraw from the study at any time before or during the interview and up to two weeks after.*
2. *Focus group participants will sign a confidentiality statement before taking part.*
3. *Focus group participants may withdraw before or during the session. Afterward, withdrawal is limited as contributions may not be distinguishable. All reporting data will be anonymised*.

4. *Your decision to participate will not affect your access to healthcare, services, or your relationship with your employer.*

What will I be asked to do if I take part?

If you are a person living with Type 2 Diabetes Mellitus (sugar):

1. If you decide to participate, you will be asked to complete screening and socio-demographic questionnaires at a convenient time. This exercise is likely to take 5–10 minutes.
2. You will be given the choice to participate in an online (Zoom or Microsoft Teams), telephone, or face-to-face interview with the principal researcher. The interview is expected to last around 45–60 minutes.
3. If you choose an online platform (Zoom or Microsoft Teams), you will be asked to log in using your unique participant identification number and password, and to use a virtual background to protect your privacy. Only audio recordings will be captured, and you will be asked to switch off the video function.
4. Face-to-face meetings will only be available in Harare or Chitungwiza.

5. Research data will be collected in English, Shona, or Ndebele based on your preference.
6. All interviews will be audio-recorded using an encrypted and password protected hand recorder and laptop.

Social network members

1. If you decide to participate, you will be asked to complete screening and socio-demographic questionnaires at a convenient time. This exercise is likely to take 5–10 minutes.
2. You will be invited to attend one focus group discussion meeting with

   4–8 other participants who also identify as caregivers of people with Type 2 Diabetes.
3. You will have the choice to participate via an online platform (Zoom or Microsoft Teams), telephone conferencing, or attend a Covid-19 safe face-to-face session. Each session is expected to last 60–90 minutes and will be moderated by the principal researcher.
4. Face-to-face focus group discussion meetings will only be available in Harare or Chitungwiza.
5. If attending online (Zoom or Microsoft Teams), you will be asked to log in using your unique participant identification number and password, and to use a virtual background to protect your privacy. Only audio recordings will be captured, and you will be asked not to switch on the video function.
6. Research data will be collected in English, Shona, or Ndebele based on your preference.
7. All focus group discussions will be audio-recorded using an encrypted and password-protected hand recorder and laptop.

Diabetes healthcare professionals and diabetes patient support group leaders/advocates:

1. If you decide to participate, you will be asked to complete screening and socio-demographic questionnaires at a convenient time. This exercise is likely to take 5–10 minutes.
2. You will be invited to attend one focus group discussion meeting with 4–8 other participants who share similar experiences of providing diabetes care or peer support in Zimbabwe.
3. You will have the choice to participate via an online platform (Zoom or Microsoft Teams), telephone conferencing, or attend a Covid safe face-to-face focus group discussion session. Each session is expected to last 60–90 minutes and will be moderated by the principal researcher.
4. If attending online (Zoom or Microsoft Teams), you will be asked to log in using your unique participant identification number and password, and to use a virtual background to protect your privacy. Only audio recordings will be captured, and you will be asked to switch off the video function.
5. Research data will be collected in English, Shona, or Ndebele based on your preference.
6. All focus group discussions will be audio-recorded using an encrypted and password-protected hand recorder and laptop.

Will my data be identifiable?

Any information you provide will be kept confidential. Personal data will be deidentified and anonymised. The principal researcher will not use your data for any purposes outside this research project. Data will be collected using screening questionnaires, a socio-demographic form, in-depth interviews, and focus group discussions. Some direct quotes may be reported verbatim. No study reports will include your name; pseudonyms and unique participant identification numbers will be used. Data will be securely stored. Only the research team and the contracted qualitative transcriber will access the data.

How will the data be stored?

- Audio recordings will be transferred securely to a password-protected and encrypted Microsoft OneDrive account licensed to Lancaster University as soon as possible after each interview or focus group discussion.
- Data on password-protected and encrypted hand recorders and laptops will be erased once the transfer is confirmed.
- Audio recordings from online platforms (Zoom or Microsoft Teams) will be downloaded to an encrypted, password-protected laptop, then transferred securely to encrypted online storage.
- These recordings will then be deleted from the online platform and local storage as soon as possible.
- Audio recordings will be destroyed once the project is submitted for examination or publication, using overwriting software licensed to Lancaster University.
- Hard copies of screening questionnaires, socio-demographic forms, consent forms, and records of oral consent will be stored separately in a locked cabinet in the principal investigator's secure office for three years.
- These documents will be shredded and disposed of in confidential waste after the storage period.
- Transcripts of in-depth interviews and focus group discussions will be archived in Lancaster University’s

research repository, Pure, for ten years, after which they will be destroyed per university policy.

- All reasonable steps will be taken to maintain participants' anonymity.

Privacy rules regarding the storage of data:

1. *WhatsApp (2021) Privacy Statement:* "We do not retain your message in the ordinary course of providing our Service to you. Instead, your messages are end-to-end encrypted and stored on your device, not on our servers."
2. *Zoom Privacy Policy:* "Recordings of meetings are not monitored or stored by Zoom. Participants are alerted by audio when a meeting is being recorded. Recordings are stored locally or on the Zoom cloud at the host's discretion." In this study, recordings will be saved to the researcher's encrypted, password-protected laptop.
3. *Microsoft Teams* is encrypted and is the approved virtual meeting tool at Lancaster University for discussing confidential content (Lancaster University, 2021).
4. Participants using online platforms should be aware that complete internet security cannot be guaranteed.
5. If you disagree with the privacy policies of these platforms, you are free to withdraw from the research.

- There are limits to confidentiality: if something you say suggests that you or someone else is at serious risk of harm, confidentiality may need to be breached. If possible, you will be informed before this is done.

- For focus groups, participants are expected to observe ground rules and maintain internal confidentiality.

What will happen to the results?

The results will be summarised and presented in a thesis. They may also be published in academic or professional journals and shared with key stakeholders.

Are there any risks?

Participating in this study may involve minor discomforts such as emotional distress, sadness, or fatigue due to the nature of the questions. However, there are no known physical or health-related risks. If you experience distress, you are encouraged to inform the researcher or log off from the platform and seek support using the resources provided.

Are there any benefits to taking part?

While you may find participation interesting or rewarding, there are no direct personal benefits.

Who has reviewed the project?

This study has been reviewed and approved by:

1. The Faculty of Health and Medicine Research Ethics Committee at

   Lancaster University (FHMREC 20194)

2. The Medical Research Council of Zimbabwe (MRCZ/A/2833)

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the principal researcher:
NYARADZO CHADA

Email: n.chada@lancaster.ac.uk

Phone: **+263 789 019 449 or + 263 719 517 610**

Dr Faraz Ahmed – Supervisor/Co-Investigator

Division of Health Research, Lancaster University

Email: f.ahmed5@lancaster.ac.uk

Telephone: +44 (0)1524 594794
Dr Paula Holland – Supervisor/Co-Investigator

Division of Health Research, Lancaster University

Email: p.j.holland@lancaster.ac.uk

Telephone: +44 (0)1524 594794

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:
Medical Research Council of Zimbabwe (MRCZ)

National Institute of Health Research

No. 20 Cambridge Road

Avondale, Harare, Zimbabwe

Telephone **+242 791792/791193/792747**

Professor Catherine Walshe

Head of Department

Faculty of Health and Medicine, Health Research

Lancaster University Lancaster LA1 4YG
Email: @lancaster.ac.uk Telephone: **+44 (0)1524 510124**

Dr Laura Machin

Chair of FHM REC Email: l.machin@lancaster.ac.uk

Faculty of Health and Medicine (Lancaster Medical School)

Lancaster University, Lancaster, LA1 4YG

Email: l.machin@lancaster.ac.uk

Tel**: +44 (0)1524 594973**

Thank you for taking the time to read this information sheet.

Resources in the event of emotional distress

Should you feel distressed due to taking part in this study, or at any point afterwards, the following resources may be of assistance:

Zimbabwe Diabetes Association

Unite for Diabetes

Appendix 13: Participant Eligibility Screening Questionnaire

MRCZ/A/2833

Hello,

My name is Nyaradzo Chada, and I am a PhD research student at Lancaster University. Thank you for your interest in our study. Before you officially enrol, I will ask you to complete a brief screening questionnaire to determine your eligibility. This will take no more than five minutes and will be conducted over the telephone. Please note that all telephone conversations will be recorded using an encrypted, password-protected recorder.

Study Participant ID:

____

Do you consent to me recording this conversation?

- If the answer is **NO** – the potential participant will be thanked for their time and informed that they are ineligible to participate.
- If the answer is **YES** – the principal researcher will complete the relevant section below.

What happens to your collected data?

- If our assessment determines that you are ineligible to participate, the principal researcher will explain the reasons. Your completed questionnaire will be securely shredded and disposed of in a confidential waste bin. Any audio recordings will be permanently deleted.

- If you are deemed eligible to enrol, your questionnaire will be included in the study materials and kept confidential. The research team will store the form in a locked cabinet in a secure location, accessible only to authorised team members. A suitable time will be arranged to obtain your informed consent.

Do you have any questions?

Ok, let us proceed. What role do you believe best describes your interest in the research?

Instructions for the research team:

○ *A person living with Type 2 Diabetes Mellitus –* ***Go to Box 1***

○ *Family and friends of people living with Type 2 Diabetes Mellitus –* ***Go to Box 2***

○ *Diabetes Healthcare professional and diabetes support group leaders –*

Go to Box 3

Box 1: People living with T2DM – Screening Questions

How old are you? ☐

When were you diagnosed with Type 2 Diabetes?

☐ 0–11 months

☐ 12–23 months

☐ 24+ months

Box 2: Caregivers screening questions

1. How old ☐ are you?

2. Has your doctor or nurse ever told you that you have T2DM?
   a. YES
   b. NO

3. Do you know a family member or friend is living with T2DM and are you involved in their diabetes self-care?
   a. YES

   b. NO

Box 3. Diabetes Healthcare Professionals and advocates – Screening questions

1.How old are you? ☐

2.What is your role within the diabetes care service provision in Zimbabwe?

____

3.How long have you worked with people living with T2DM

____

Thank you

Nyaradzo Chada, Principal Researcher

Appendix 14: Written Informed Consent Form for People with T2DM

MRCZ/A/2833

Study Participant Number__________________________________.

PROJECT TITLE*: *Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe: A qualitative intrinsic case study.

Principal Investigator: **Nyaradzo Chada, BSc, MPH**

Phone number(s): **+ 263 789 019 449 or + 263 719 517 610**

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.

- Routine care is based on the best-known treatments and is provided with the primary goal of helping the individual patient. The main goal of research studies is to gain knowledge that may help future patients.
- We cannot promise that this research will benefit you. Just like regular care, research may have side effects that can be serious or minor.
- You have the right to refuse to take part or to agree now and change your mind later.

- Whatever you decide, it will not affect your regular care.
- Please review this consent form carefully. Ask any questions before you decide.
- Your participation is voluntary.

Purpose

You are being asked to participate in a research study on the psychosocial health needs of adults living with Type 2 Diabetes Mellitus, in Zimbabwe. The purpose of the study is to explore the qualitative experiences of people living with Type 2 diabetes, members of their social networks (family, relatives, and friends), diabetes healthcare professionals, and diabetes patient support group leaders or peers, by focusing on psychosocial barriers and enablers to engagement in recommended diabetes self-care and management within Zimbabwe.

You were selected as a potential participant in this study because you have experience of, or knowledge about, Type 2 diabetes, including as someone living with the condition, a family member, relative, friend, peer support group leader, or healthcare professional. Study participants will be recruited in Zimbabwe. The study aims to recruit 12– 20 people living with Type 2 diabetes, 10–18 family members or friends involved in the diabetes self-care of persons with diabetes (PWD) who do not have a diagnosis of T2DM, 10–18 diabetes healthcare professionals, and 10–18 diabetes peer support group leaders based on their professional roles.

Procedures and duration

If you decide to participate:

- You will be invited to complete a brief eligibility screening questionnaire over the telephone with the research team. This is expected to last up to 5 minutes.
- You will be invited to complete a socio-demographic questionnaire with the research team over the telephone. This is expected to last 5–10 minutes.
- You will be invited to participate in an in-depth interview with the principal researcher and an interpreter (if Ndebele is your preferred language). This interview is expected to last up to 60 minutes at a time convenient to you (daytime, evening, or weekend).
- You can choose to have your interview in your preferred language (English, Shona, or Ndebele) via WhatsApp call, telephone, or face-to face meeting with the principal researcher and interpreter (if required).
- You may speak to the research team in your preferred language to share your lived experiences and views.
- Face-to-face interviews will be conducted at neutral venues in Harare or Chitungwiza, and the research team will provide venue details.
- If you choose a face-to-face interview, the Government of Zimbabwe's COVID-19 social distancing rules and public health guidelines will be observed.

Benefits and/or compensation

We cannot guarantee or promise that you will receive any direct benefits from participating in this study, although you may find participation interesting.

1. Study participants will be reimbursed for transport costs totalling USD 5.00 (or the equivalent in Zimbabwean dollars).

Refreshments will be provided to all participants attending face-to-face interviews.

Confidentiality

If you agree to take part in this study, any information obtained will remain confidential. The research team will not disclose any confidential information to third parties without your permission. However, there may be limits to confidentiality, as the research team is required by law to report any risk of harm to participants or others if it arises during data collection. The research team will inform you before reporting any such safeguarding issues.

Your data will be assigned a study participant number (e.g., signed informed consent forms, questionnaires, audio recordings, and transcripts). The research team will keep the list linking your name to this study number in a secure, locked cabinet during the study.

Before you agree to take part, please review the participant information sheet and discuss your participation with close family and friends.

With your permission, your conversations during interviews will be recorded using a password-protected and encrypted voice recorder to allow the research team to focus fully during the interview. All audio recordings will be anonymised (names and identifiable details removed) and used to create written transcripts for data analysis.

If necessary, anonymised recordings may be transcribed by a reputable, approved commercial transcription service. This company will sign a legally binding confidentiality agreement prohibiting the disclosure of your data. The research team will provide instructions and verify the accuracy, formatting, and style of returned transcripts.

All participants must give consent for anonymised audio recordings to be shared with a professional transcriber. As part of the consent process, you may indicate whether you prefer the research team to transcribe your data or if you do not object to the use of an external service.

The principal investigator may share anonymised recordings and verbatim transcripts with their PhD supervisory team during thematic analysis for quality assurance. The study findings will be summarised in a thesis, may be submitted for publication in academic or professional journals, and shared with relevant stakeholders, including the Medical Research Council of Zimbabwe.

Voluntary participation

Participation is voluntary, and you are free to withdraw at any time within the stated limits (before or within 14 days after your interview) without giving a reason, and without it affecting your legal or healthcare rights. If you choose not to participate, it will not affect your diabetes care.

Additional elements

See below.

Informed Consent

PROJECT TITLE: Psychosocial health needs of adults living with Type 2

Diabetes Mellitus: A qualitative intrinsic case study.

Offer to answer questions

Before signing this form, please ask any questions about anything unclear. Take as much time as necessary. Read the participant information sheet carefully and speak to the principal investigator, NYARADZO CHADA, if you have any concerns or queries.

Authorisation

You are deciding whether or not to participate in this study. Your signature below indicates that you have read and understood the information provided, have had your questions answered, and have agreed to participate.

Please read each statement below. If you agree, mark or tick the box.

1	I am over 18 years of age and wish to participate in this research study.	
2	I confirm that I have read the information sheet and fully understand what is expected of me within this study.	
3	I confirm that I have had the opportunity to ask any questions and to have them answered.	
4	I understand that my contributions during in-depth interviews will be audio-recorded and then made into an anonymised written transcript.	
5	I understand that audio recordings will be kept until the research project has been examined.	
6	I understand that my participation is voluntary. I am free to withdraw within the stated time limits (before and within 14 days of the interview) without giving any reason, and without it affecting my medical care or legal rights.	
7	I understand that once my data are anonymised and incorporated into themes, it may not be possible to	

	withdraw them; however, I may still ask for my data not to be quoted in the study report.	
8	I understand that the information from my interview will be pooled with other participants’ responses, anonymised, and published. All reasonable steps will be taken to protect participant anonymity.	
9	I consent to information and quotations from my interview being used in reports, conferences, and training events.	
10	I consent to the audio recording from my interview being transcribed by a professional transcription service, and I am satisfied with the confidentiality safeguards. I understand that all responses transcribed by professionals will be kept secure, confidential, and anonymous. If I do not agree to this, I will leave this box blank, and my interview will be transcribed manually by the research team.	
11	I understand that the researcher may discuss anonymised transcript data with their supervisory team as required.	
12	I understand that any information I provide will remain confidential and anonymous unless there is a concern of risk to myself or others, in which case the principal investigator may share it with their supervisor and relevant authorities.	
13	I consent to Lancaster University retaining the written interview transcripts for 10 years after the conclusion of the study.	
14	I consent to take part in the above study.	

Signature page

PROJECT TITLE: Psychosocial health needs of adults living with Type 2

Diabetes Mellitus: A qualitative intrinsic case study

Protocol Version Number 3

Name of Research Participant (please print): Date:

________________________________ ________________

____

Name of Staff Obtaining Consent:

Signature: ______________________________

Date: ___________________________________

Audio Recording

Statement of Consent to be Audiotaped.

The in-depth interview will be audio-recorded using a password-protected and encrypted digital recorder to capture speech verbatim for data collection and analysis.

I understand that audio recordings will be taken during the study. (For each statement, please indicate YES or NO by initialling the appropriate box.)

I agree to **being audio recorded** **Yes** ☐

No ☐

If you do not consent to have your interview audio-recorded, you will be ineligible to continue with the study.

Name of Participant (please print): ___________________________________

Signature: _____________________________

Date: _________

You will be offered a copy of this consent form to keep

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant, or research-related concerns, or if you feel you have been treated unfairly and would like to speak to someone other than a member of the research team, please contact:

1. Medical Research Council of Zimbabwe (MRCZ) Telephone (263) +242 791792/791193/792747. The MRCZ Offices are located at the National Institute of Health Research premises at No 20 Cambridge Road Avondale, Harare, Zimbabwe.
2. Professor Catherine Walshe, Head of Department, Faculty of Health and Medicine, Health Research, Lancaster University, United Kingdom. Email: c.walshe@lancaster.ac.uk. Telephone: **00 44 1524 510124.**

3. If you wish to speak to someone outside the Public Health Doctorate

   Programme, contact Dr Laura Machin, Chair of Faculty of Medicine,
   Health Research, Lancaster Medical School, Lancaster University, LA1
   4YG, United Kingdom. Email: l.machin@lancaster.ac.uk.
   Telephone: **00**
   44 1524 594973

Appendix 15: Informed Consent Script

MRCZ/A/2833

Study Participant Number:

PROJECT TITLE: ***Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe. A qualitative intrinsic case study***

Principal Investigator: **NYARADZO CHADA, BSc, MPH**

Phone number(s): **+ 263 789 019 449 or +263 719 517 610**

- This consent is provided so that you may read about the purpose, risks, and benefits of the research.
- Routine care is based on the best-known treatment and aims to help the individual patient. Research, however, aims to gain knowledge that may help future patients.
- We cannot guarantee that you will benefit from this research. Like regular care, it may have minor or serious side effects.
- You have the right to refuse to take part or to agree now and change your mind later.
- Whatever your decision, it will not affect your regular care, employment, or community relationships.
- Please read this consent form carefully and ask any questions before deciding.
- Participation is voluntary.

Purpose

You are being asked to participate in a research study on the psychosocial health needs of adults living with Type 2 Diabetes Mellitus, depression, and diabetes-related distress in Zimbabwe. The purpose of the study is to explore the qualitative experiences of people living with Type 2 diabetes, members of their social networks (family, relatives, and friends), diabetes healthcare professionals, and diabetes patient support group leaders or peers, by focusing on psychosocial barriers and enablers to engagement in recommended diabetes self-care and management within Zimbabwe.

You were selected as a possible participant in this study because you have experience of, or knowledge about, Type 2 diabetes. This includes people with Type 2 diabetes, their families, relatives, friends, peer support group leaders, and diabetes healthcare professionals. Participants will be recruited in Zimbabwe. The study aims to include:

- 12–20 people living with Type 2 diabetes
- 20–25 family members or friends involved in diabetes self-care of persons with diabetes (PWD) who do not have a diagnosis of T2DM
- 10–18 diabetes healthcare professionals
- 10–18 diabetes peer support group leaders, based on their professional roles

Procedures and duration

If you decide to participate:

- ❖ You will be invited to complete a brief eligibility screening questionnaire over the telephone with the research team. This will take approximately 5 minutes.

- You will be asked to complete a socio-demographic questionnaire with the research team by telephone. This is expected to take 5–10 minutes.
- If you are a person living with Type 2 diabetes, you will be invited to take part in an in-depth interview with the principal researcher and an interpreter (if Ndebele is your preferred language). This will last up to 60 minutes at a convenient time (day, evening, or weekend).
- You may choose to have the interview via WhatsApp call, telephone, face-to-face, Zoom, or Microsoft Teams.
- If you are a diabetes healthcare professional or a diabetes support group/peer group leader or advocate, you will be invited to attend focus group discussions online (Zoom or Microsoft Teams) or in person. These will last 60–90 minutes and involve the principal researcher, a note-taking facilitator, and an interpreter if needed.
- Face-to-face interviews and focus groups will be held at neutral venues in Harare or Chitungwiza, and details will be provided.
- COVID-19 social distancing and public health guidelines will be followed during any face-to-face sessions.
- You may speak to the research team in English, Shona, or Ndebele. If you choose Ndebele, an interpreter will assist with your permission; otherwise, the session will be offered in English.

Benefits and/or compensation

We cannot guarantee or promise any direct benefits, although you may find the experience interesting.

1. Study participants attending face-to-face sessions will be reimbursed for transport costs up to USD 5.00 (or the equivalent in Zimbabwean dollars). Refreshments will also be provided.

2. Participants joining via telephone or online platforms (Zoom or Microsoft Teams) will receive mobile phone credits of USD 5.00 (or the equivalent) to cover data and Wi-Fi usage. Airtime tokens will be shared via text, WhatsApp, or email as per participant preference. Vouchers will be issued before the session, regardless of whether the participant completes the interview or group session.

Confidentiality

If you agree to take part in this study, any information obtained in connection with it will remain confidential. The research team will not disclose any confidential information to third parties without your permission. However, the nature of focus groups prevents the researchers from guaranteeing
confidentiality. Each participant will be asked to sign a statement agreeing to respect the privacy of fellow participants and not to repeat what is said in the focus group to others. There may be limits to confidentiality, as the research team is legally required to report any risk of harm to participants or others disclosed during data collection. You will be informed before any such safeguarding concerns are reported.

The research team will assign a study participant number to all your shared information (e.g., signed informed consent forms, questionnaires, audio recordings, and interview transcripts). A secure list linking your name to this code will be stored in a locked metal cabinet during the study.

Before agreeing to participate, please review the participant information sheet and discuss your participation with close family or friends.

Your conversations during in-depth interviews or focus group discussions will be recorded using a password-protected and encrypted voice recorder to allow the research team to focus during the sessions. These audio recordings will be anonymised (i.e., names or identifying information removed) and used to generate transcripts for data analysis. Due to the volume of data in qualitative research, the research team may enlist a reputable and approved commercial transcription service. This service will sign a legally binding confidentiality agreement prohibiting the sharing of any data or identifiers. Participants must provide consent before anonymised recordings are shared with the transcriber. You will be able to indicate whether you prefer your data to be transcribed by the research team or if you are comfortable with it being transcribed by the contracted service. The research team will issue clear instructions to the transcription service and will review all transcripts for accuracy in content, formatting, and style.

As part of the PhD study, the principal investigator may share anonymised audio recordings and transcripts with the supervisory team for quality assurance. The results will be summarised in a thesis, may be published in academic or professional journals, and shared with stakeholders such as the Medical Research Council Zimbabwe.

Voluntary participation

Participation is entirely voluntary, and you are free to withdraw at any time within the stated time limits without providing a reason. Withdrawing will not affect your legal or medical rights.

Additional elements

See below.

Informed Consent

PROJECT TITLE: ***Psychosocial health needs of adults living with Type 2***

Diabetes in Zimbabwe: A qualitative intrinsic case study

Offer to answer questions

Before you give the research team permission to audio-record your interview and sign this form on your behalf, please ask any questions about the study. You may take as much time as necessary to make your decision. Before giving consent, please read the participant information sheet. If you have any questions or concerns, speak with the principal investigator, NYARADZO CHADA.

Authorisation

You are deciding whether to participate in this study. Your oral consent indicates that you have read and understood the information provided, had your questions answered, and have agreed to take part.

The oral consent process includes:

1. Sharing the Participant Information Sheet and an unsigned informed consent form in English, or a translated version based on your preferred language, before the telephone interview via email or WhatsApp.
2. Providing the English-language versions so you may consult with a trusted family member or English-speaking contact.
3. Allowing you up to two weeks to decide whether to participate.

Obtaining Oral Consent Verbally or Over the Telephone

The research team will ask participants if they have questions or concerns and will verify their ability to provide consent using the following script.

1. Do you give your permission for me to interview and audio-record our interview? If yes, proceed. If no, offer alternative consent options (e.g., email link or written consent if in Harare or Chitungwiza).
2. What is your year of birth?
3. Have you had the opportunity to read the offered informed consent form and participant information sheet?
4. Do you have any questions?
5. Do you understand the purpose of this study?
6. Do you permit me to re-contact you to clarify information?
7. Do you permit me to quote you directly without identifying you?
8. Are you happy to take part in the study?
9. Thank you. Let us begin.

Consent Seeking Process and Record of Consent

Once the researcher confirms the participant has understood the information and has provided fully informed consent, they will:

1. Request permission to record the oral consent using a password protected voice recorder.
2. Record the date and time on the informed consent form.

3. Sign the form and send a copy of the signed oral consent to the participant via email or WhatsApp.
4. Securely store the signed oral consent in a locked cabinet for three years.

5. Scan and securely transfer the consent to Lancaster University's password-protected, encrypted Microsoft OneDrive cloud storage. After confirming 100% data transfer, the principal researcher will delete the recording from the encrypted voice recorder.

Signature page

Record of Oral Consent

PROJECT TITLE: ***Psychosocial health needs of adults living with Type 2***

Diabetes Mellitus: A qualitative intrinsic case study in Zimbabwe:

Protocol Version Number 3

Name of Research Participant (Completed by PI)

Date: _______________________________

Name of Staff Obtaining Oral Consent:

____

______

Signature:

____

You will be offered a copy of this consent form to keep.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant, or research-related injuries, or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact:

1. *Medical Research Council of Zimbabwe (MRCZ). Telephone: (263) +242*

   791792/791193/792747. The MRCZ Offices are located at the National Institute of Health Research at No 20, Cambridge Road, Avondale, Harare, Zimbabwe.
2. *Professor Catherine Walshe, Head of Department, Faculty of Medicine, Health Research, Lancaster University, the United Kingdom. Email: c.walshe@lancaster.ac.uk. Telephone: **+ 44 1524 510124**.*
3. *If you wish to speak to someone outside the Public Health Doctorate Programme, contact Dr Laura Machin. Chair of. Faculty of Medicine, Health Research, Lancaster Medical School, Lancaster University, LA1 4YG, United Kingdom. Email: l.machin@lancaster.ac.uk. Telephone: **+ 44 1524 594973.***

Audio Recording

Statement of Consent to be Audiotaped

The oral consent will be audio-recorded using a password-protected and encrypted digital recorder to document the consent process verbatim.

I understand that audio recordings will be made during the study. (Please indicate YES or NO by inserting your initials in the relevant box.

I agree to **being audio recorded:**

Yes **NO**

If you do not consent to be audio-recorded, you may be able to provide your consent during face-to-face meetings or via a secure link sent by email.

Name of Participant (Recorded by Staff Please Print):

______________________________ Date: _________

Name of Staff Obtaining Oral Consent:

____

Signature: _____________________________

Date: ________

Appendix 16: Informed Consent Form for Focus Group Discussions

Health & Medicine | Lancaster University

MRCZ/A/2833

Study Participant ID

PROJECT TITLE: Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe: A qualitative intrinsic case study

Principal Investigator: **Nyaradzo Chada, BSc, MPH**

Phone number(s): **+ 263 789 019 449 or + 263 719 517 610**

What you should know about this research study:

- ❖ We give you this consent form so that you may read about the purpose, risks, and benefits of this research study.
- ❖ Routine care is based on the best-known treatment and is provided with the primary goal of helping the individual patient. The main purpose of research studies is to gain knowledge that may help future patients.
- ❖ We cannot promise that this research will benefit you. Just like regular care, this research may have minor or serious side effects.
- ❖ You have the right to refuse to participate or to take part now and change your mind later.
- ❖ Whatever you decide, it will not affect your current affiliations with organisations or communities.
- ❖ Please review this consent form carefully. Ask any questions before you decide.
- ❖ Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study on the psychosocial health needs of adults living with Type 2 Diabetes Mellitus, depression, and diabetes-related distress in Zimbabwe. The purpose of the study is to explore the qualitative experiences of people living with Type 2 diabetes , members of their social networks (family, relatives, and friends), diabetes healthcare professionals, and diabetes patient support group leaders or peers, by focusing on psychosocial barriers and enablers to engagement in recommended diabetes self-care and management within Zimbabwe.

You were selected as a possible participant because you have experience of, or knowledge about, Type 2 diabetes. Study participants will be recruited in Zimbabwe. The study aims to recruit:

- 12–20 people living with T2DM.
- 20–25 family members or friends involved in diabetes self-care of
  PWD who do not have a diagnosis of T2DM
- 10–18 diabetes healthcare professionals
- 10–18 diabetes peer support group leaders,

PROCEDURES AND DURATION

If you decide to participate:

Caregivers (family members and friends):

- ✞ You will be invited to complete a screening for eligibility questionnaire with your permission via telephone or WhatsApp call by the research team. This will take up to 5 minutes.

- After you consent to participate, you will be invited to complete a socio-demographic factors questionnaire over the telephone or WhatsApp call. This will take up to 5–10 minutes.
- You will be invited to attend one group meeting with 5–8 other participants who also have experience living with someone with Type 2 Diabetes.
- You will attend a Covid-19 safe face-to-face group meeting, expected to last 60–90 minutes, moderated by the research team (the principal researcher, an interpreter for Ndebele-language sessions, and a facilitator taking notes).
- Each participant will be assigned a study participant number or pseudonym.
- Focus group discussions will be conducted in English, Shona, or Ndebele, based on your preferred language.
- Face-to-face focus group discussions will be held in central venues in Harare or Chitungwiza.
- Only audio recordings will be captured using password-protected and encrypted voice recorders. Your contributions and those of other participants will be transcribed into interview transcripts and used to generate themes as part of data analysis.

Diabetes Health Care Professionals and Diabetes Patient Support Group Leaders/ Advocates

- You will be invited to complete a screening for eligibility questionnaire via telephone or WhatsApp call by the research team. This will take up to 5 minutes.
- After you consent, you will be asked to complete a sociodemographic factors questionnaire over the phone or WhatsApp. This will take 5–10 minutes.

- You will be invited to attend one group meeting with 5–8 participants with experience providing diabetes care within the healthcare system in Zimbabwe.
- You will attend a Covid-safe face-to-face focus group discussion, expected to last 60–90 minutes, moderated by the research team (principal researcher, interpreter for Ndebele, and a note-taking facilitator)
- Each participant will be assigned a study participant number or pseudonym.
- Focus group discussions will be conducted in English, Shona, or Ndebele.
- Sessions will be held in central venues in Harare or Chitungwiza.
- Only audio recordings will be taken using password-protected and encrypted devices. The recordings will be transcribed and analysed to identify themes.

BENEFITS AND/OR COMPENSATION

- We cannot guarantee or promise any direct benefit from participating, though you may find it interesting or rewarding.
- Participants will be reimbursed for transport costs totalling USD 5.00 (or the equivalent in Zimbabwe dollars).
- Refreshments will be provided to all participants attending face-to- face interviews.

ALTERNATIVE PROCEDURES OR TREATMENTS

- Not applicable.

CONFIDENTIALITY

Suppose you agree to take part in this study. In that case, any information obtained will remain confidential. The research team will not disclose any confidential information to third parties without your permission. However, the nature of focus groups prevents the researchers from guaranteeing confidentiality; each participant will be asked to sign a statement agreeing to respect the privacy of their fellow participants and not to repeat what is said in the focus group to others.

There may be limits to confidentiality, as the research team is required by law to report any risk of harm to participants or others that may be disclosed during data collection. The research team will inform you prior to reporting any such safeguarding concerns.

The research team will assign a study participant number to your shared information (e.g., signed informed consent forms, questionnaires, audio recordings, and interview transcripts). The list linking your name to your participant number will be stored securely in a locked metal cabinet for the duration of the study.

Before agreeing to take part, please review the participant information sheet and discuss your possible participation with close family or friends.

Your conversations during focus group discussions will be recorded using a password-protected and encrypted voice recorder so the research team can focus on the session. The research team will anonymise all audio recordings (removing any names or identifiable details) and use them to generate written transcripts for data analysis.

Given the volume of data typically produced in qualitative research, it may be necessary for the research team to seek assistance with transcription. A reputable and approved commercial transcription service will be engaged for this purpose. The service provider will sign a legally binding confidentiality agreement prohibiting them from disclosing any identifiers or data collected during the study.

All focus group participants must consent before any anonymised audio recordings are shared with the professional transcription service. As part of the consent process, you may indicate whether you would prefer your data to be transcribed by the research team or if you are comfortable with the use of a contracted transcription service. The research team will provide detailed instructions to the transcriber and will review returned transcripts for verbatim accuracy, style, and formatting.

As part of the PhD programme, the principal investigator will share anonymised audio recordings and transcripts with the supervisory team to ensure quality assurance during data analysis. Findings will be summarised and included in the doctoral thesis, may be submitted to academic or professional journals, and may also be shared with key stakeholders such as the Medical Research Council of Zimbabwe.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. You are free to withdraw at any time within the stated limits (before or during the focus group discussion) without providing a reason, and without your legal rights being affected. If you choose not to participate, this will not affect your existing relationships with your organisation or community.

ADDITIONAL ELEMENTS

See below

Informed Consent

PROJECT TITLE: ***Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe: A qualitative intrinsic case study***

OFFER TO ANSWER QUESTIONS

Before signing this form, please ask any questions you may have regarding any unclear aspects of this study. You may take as much time as needed to consider your participation. We ask that you read the participant information sheet before consenting. You are encouraged to speak with the principal investigator, NYARADZO CHADA, if you have any questions.

AUTHORISATION

You are deciding whether or not to participate in this study. Your signature confirms that you have read and understood the information above, have had all your questions answered, and agree to participate.

Please read each statement below. If you agree, please initial or tick each box.

1	I am over 18 years of age and wish to participate in this research study.	
2	I confirm that I have read the information sheet and fully understand what is expected of me within this study.	
3	I confirm that I have had the chance to ask any questions and to have them answered.	

4	I understand that my contributions during focus group discussions will be audio-recorded and transcribed into an anonymised written transcript.	
5	I understand that audio recordings will be stored until the research project has been examined.	
6	I understand that my participation is voluntary, and I am free to withdraw within the stated time limits without giving a reason and without my legal rights being affected.	
7	I understand that once my data have been anonymised and incorporated into themes, it may not be possible to withdraw it; however, I may still request that my data not be quoted in the study report.	
8	I understand that the information from my focus group contributions will be pooled with those of other participants, anonymised, and published. The research team will take all reasonable steps to protect participant anonymity.	
9	I understand that complete confidentiality cannot be guaranteed due to the nature of focus group discussions, and I am satisfied with the measures taken by the research team.	
10	I consent to the audio recordings from my focus group discussions being transcribed by a professional transcription service, and I am satisfied with the confidentiality measures taken. If I do not agree, I will leave this box	

	blank, and the research team will transcribe my data manually.	
11	I consent to information and quotations from my focus group contributions being used in reports, conferences, and training events.	
12	I understand that the researcher may discuss anonymised transcripts with their supervisory team as needed.	
13	I understand that all information I provide will remain confidential and anonymous unless there is a concern that I, or someone else, is at risk of harm, in which case the principal investigator may share this with supervisors or relevant authorities.	
14	**Non-Disclosure Statement**: I agree to maintain the confidentiality of all information shared during the focus group. If I am unable to agree, I understand that I may not be eligible to continue participation.	
15	I consent to Lancaster University retaining anonymised transcripts of the interview for ten years following the conclusion of the study.	
16	I consent to take part in the above study.	

SIGNATURE PAGE

PROJECT TITLE: *Psychosocial health needs of adults living with Type 2 Diabetes Mellitus in Zimbabwe. A qualitative intrinsic case study*

Protocol Version Number 3

Name of Research Participant (please print):

____
______

Signature of Participant: ___________________________

Date:

____

Name **of Staff Obtaining Consent:**

Signature: ____

Date: ____

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries, or if you feel you have been treated unfairly and would like to speak to someone outside the research team, please contact:

1. Medical Research Council of Zimbabwe (MRCZ). Telephone: (**263)**

   +242 791792/791193/792747. The MRCZ Offices are located at the

   National Institute of Health Research at No 20 Cambridge Road Avondale, Harare, Zimbabwe.

2. Professor Catherine Walshe, Head of Department, Faculty of Medicine, Health Research, Lancaster University, the United Kingdom. Email: c.walshe@lancaster.ac.uk. Telephone: **+ 44 1524 510124**.

3. If you wish to speak to someone outside the Public Health Doctorate Programme, contact Dr Laura Machin, Chair of Faculty of Medicine, Health Research, Lancaster Medical School, Lancaster University, LA1 4YG, United Kingdom. Email: l.machin@lancaster.ac.uk. Telephone: **+ 44 1524 594973**.

Audio Recording

Statement of Consent to be Audiotaped

The focus group discussions will be audio-recorded using password-protected and encrypted digital recorders to capture speech verbatim for data collection and analysis.

I understand that audio recordings will be taken during the study. (For each statement, please choose YES or NO by inserting your initials in the relevant box.)

I agree to **being audio recorded:** **Yes. No.**

If you do not consent to have your interview audio-recorded, you will be ineligible to continue with the study.

Name of Participant (please print): ________________________________

Signature : __________________________

Date : _______________________________

Appendix 17 : Participant Socio-Demographic Questionnaire.

Health & Medicine | Lancaster University

MRCZ/A/2833

Study Participant ID: ☐

What is your gender?

☐ Female

☐ Male

What is your marital status?

☐ Single (never married)

☐ Married or in a domestic partnership

☐ Widowed

☐ Divorced

☐ Separated

☐ Prefer not to say

What is the highest level of education you have completed? (If you are currently enrolled in school, please indicate the highest degree you have received.)

☐ Primary education

☐ Secondary education

☐ Bachelor’s degree or equivalent

☐ Master’s degree or equivalent

☐ Doctoral degree or equivalent

☐ None

☐ Not known

What is your current employment status?

☐ Paid Employee

☐ Employer

☐ Own-account worker – agriculture

☐ Own-account worker – other

☐ Unemployed and currently looking for work

☐ Unemployed and not currently looking for work

☐ Student

☐ Retired/sick/ too old

☐ Homemaker

☐ Other ………………………………….

Thank you.

Appendix 18: In-Depth Semi-Structured Interview Guide for People with T2DM.

MRCZ/A/2833

Type of questions	Example of open-ended questions
Opening question	Can you tell me about your experience of diabetes self-care activities? Can you expand on that a bit? **Probes** **Diet** • Can you describe a typical day's meals for you? • What dietary adjustments have you made since your diagnosis? • What challenges do you face in maintaining a diabetes-friendly diet? **Physical activity**

	• What types of physical activity or exercise do you engage in? • How often do you exercise, and for how long? • What motivates or hinders your regular engagement in physical activity? **Medication Adherence** • Can you walk me through your daily medication routine? • Have you ever missed doses? If so, what are the common reasons? **Self-Monitoring of Blood Glucose** • How often do you check your blood glucose levels? • What influences when and how you monitor your glucose? **Foot Care** • How often do you check your feet for cuts, wounds, or infections? **Health Care Use**

	- How often do you visit healthcare professionals for diabetes management? - What kind of support do you receive? - Do you feel comfortable discussing your concerns with your doctor or nurse? - Have you attended any diabetes education programmes or support groups?
Key Questions	I would like you to reflect on your experience of following diabetes selfcare. Can you share how this makes you feel? **Probes** **Diabetes-Related Distress** - Can you describe moments when managing your diabetes felt particularly overwhelming? - Which aspects of self-care cause the most frustration?

	• How do you cope when diabetes feels burdensome. **Concerns** • What worries you most about living with diabetes? • Have you ever felt uncertain about managing your diabetes? • How do concerns about complications affect your daily life? **Helplessness** • Have there been times when you felt that diabetes is difficult to control, no matter what you do? • What makes you feel powerless about your health? • What helps you regain a sense of control? **Challenges and enablers** What are the biggest challenges in managing your diabetes?

Key questions	Managing diabetes can be challenging, and many people rely on different forms of support. Can you share who helps you in your journey? **Probing Questions:** **1. Financial Challenges** • Diabetes self-care can be costly. Who helps you financially, if anyone? • Have you faced difficulties affording medication, healthy food, diabetes supplies, or medical visits? **Probe** Coping mechanisms

	2. Demands of Living with T2DM • Who supports you in following your diabetes self-care routine (e.g., meal preparation, exercise, medication reminders)? • How do family members, friends or others react when you try to manage your diabetes? Do they encourage or discourage your efforts? • Are there people who offer emotional support when diabetes feels overwhelming? **3. Relationships with Family, Friends, and Community Members** • How does your family support (or not support) you in managing diabetes? • Do you receive support from religious or community groups? • Are there cultural beliefs in your community

	that make it easier or harder to manage diabetes? **4. Relationships with Healthcare** **Providers** • How would you describe your relationship with your healthcare providers? **Probe** Negative or supportive interactions • What kind of healthcare support do you wish you had more access to

Examples of Themes Covered by the Interview:	Diabetes self-care experience Role of social networks in diabetes self-care Psychosocial aspects of diabetes self-care
Ending Question	Finally, is there anything about the experiences of living with Type 2 diabetes that has not been discussed that you would like to talk about further?
Debriefing	**Check how the participant feels after the interview.** • Explore concerns and offer contacts for support. • Thank the participant.

Adapted from Bhattacharya (2012).

Appendix 19: Focus Group Discussion Topic Guide for Healthcare Professionals

MRCZ/A/2833

Thank you for taking the time to join us to talk about your views and perceptions regarding the provision of diabetes care that includes psychosocial aspects of living with Type 2 diabetes in Zimbabwe. You have been invited to take part as there is evidence that views and insights from people living with T2DM, their social networks (family members and friends), and other key stakeholders (diabetes patient support groups and healthcare professionals) are essential to better understanding barriers to self-care and designing interventions that improve diabetes care.

My name is Nyaradzo Chada. I am currently a doctoral student at Lancaster University, and I will be moderating this session today. There are no wrong answers, just different points of view. Please feel free to share your views, even if they differ from what others have said. Keep in mind that we are equally interested in both negative and positive comments. Negative comments are often the most helpful. Your group discussion will be audio-recorded so that we do not miss your insights. People often share valuable thoughts, and we cannot write them down quickly enough. During this session, we will be on a first-name basis, and no names will be used in reports. You may be assured of complete confidentiality.

Well, let us begin.

Script – Telephone Conference Meeting

1. Audio from the session is being recorded.

Let us agree on some ground rules:

- One person speaks at a time.
- Everyone must take part in the discussion; there are no right or wrong answers.
- There is no obligation to answer any question that makes you uncomfortable.
- Respect others' views and opinions; do not criticise others' comments.
- Minimise side conversations.
- All views and opinions are shared in confidence and must not be shared outside this group.
- The focus group will be recorded and transcribed; all contributors' names will be anonymised.
- The session will last approximately one to one and a half hours.

If you feel uncomfortable during the discussion, you may log off from the telephone conference session.

Kreuger (2002) 'categories	**Example**
Opening Question	How long have you been working with people with T2DM? Could you describe your role?

Introductory Questions	I would like you to think about the primary sources of support or stress for people with T2DM. Can you share your thoughts and views?
Transition Question	People with T2DM may experience issues with their mental health and emotional well-being? Can you share your thoughts and views?
Key Questions	Given that T2DM is a chronic condition, have there been times when you noticed people with T2DM feeling overwhelmed, stressed, or burdened by its management? ***Probe*** In what ways do you identify this emotional distress?

Key Question	I would like to ask you a few questions about identifying emotional distress among people with T2DM. **Probes** • What makes it easier for you to discuss possible emotional distress with people with T2DM? • What makes it more difficult to discuss emotional distress with them? • Do you have experience referring individuals with T2DM for mental health or peer support?
Ending Question	Finally, is there anything about experiences related to diabetes self-care and Type 2 diabetes that has not been discussed and that you would like to raise?
Debriefing	**Check how does participants feel after interview?** • Explore concerns, offer contacts for support. • Thank the participants.

Appendix 20: Focus Group Discussion Topic Guide for Self-Identified Caregivers

MRCZ/A/2833

Good day, and welcome to our session. Thank you for taking the time to join us today. This discussion focuses on your views and perceptions of diabetes self-care, including psychosocial aspects of living with Type 2 diabetes (T2DM) in Zimbabwe. You have been invited to participate because you have the lived experience of diabetes self-care as a self-identified caregiver for someone with T2DM. Your insights are valuable for understanding barriers and enablers of diabetes self-care and for the development of culturally tailored psychosocial interventions to improve diabetes care in Zimbabwe.

There are no wrong answers, just different points of view. Please feel free to share your opinion, even if it differs from what others have said. We are equally interested in negative and positive comments. Negative feedback is often the most insightful. We are recording the session to ensure that your comments are captured accurately. People often say valuable things that we cannot note down fast enough. During this session, we will use first names only, and no names will appear in any reports. You may be assured of complete confidentiality.

Well, let us begin.

My name is Nyaradzo Chada, and I am a doctoral student in Public Health at Lancaster University.

Script for Online Meetings

1. Log onto the research session online using the provided password or

link.

2. Turn off your video camera and use a blank background in Zoom or Microsoft Teams sessions).
3. Audio from the session is being recorded.

4. Enter your year of birth when prompted.

Let us now agree on some ground rules.

1. Silence or switch off your mobile phone.

2. One person speaks at a time.

3. Everyone must take part in the discussion; there are no right or wrong answers.
4. You are not obliged to answer any question that you are uncomfortable with.
5. Respect each other's views; do not criticise others' comments.

6. Minimise side conversations.

7. All views or opinions are confidential and must not be shared outside the group.
8. The focus group will be recorded and transcribed; contributors’ names will be anonymised.
9. The session will last up to one to one and a half hours.

If you feel uncomfortable during the discussion, please use the ‘hand’ function on the online platform. The research team will assist you. If you prefer, you may log off from the online session.

Kreuger (2002) ‘categories	**Example**

Opening Question	How long have you been living with, or have you been friends with, people living with Type 2 diabetes?
Introductory Questions	**Now, I would like you to focus on your understanding of your loved one's diabetes self-care journey.** • How would you describe your loved one's approach to managing their diabetes? • What aspects of diabetes selfcare does your loved one find easy to follow and the most challenging? (e.g. diet, medication, exercise, monitoring blood sugar).

Transition Question	What are the challenges and enablers of diabetes self-care among people with T2DM? **Probe** How does the cost of diabetes care affect your loved one's ability to engage in diabetes self-care? Have you ever seen people with T2DM make difficult choices because of financial limitations (e.g., skipping medication, reducing food quality)? How does family and social support help or hinder people with T2DM in their diabetes self-care?
Key Questions	Given that T2DM is a chronic condition: Probe **Emotional and Psychological** **Aspects of Self-Care** • How does your loved one feel about their diabetes diagnosis and self-care routine?

	• Have you observed any emotional distress, frustration, or sadness in them related to their diabetes?
Examples of Themes Covered by the FGDs	• Lived experience of diabetes self-care • Psychosocial aspects of diabetes self-care engagement • Barriers and enablers of diabetes self-care
Ending Question	Finally, is there anything that has not been discussed that you like to discuss further with others?
Debriefing	**Check how does participants feel after discussions** • Explore concerns and offer contacts for support. • Thank the participants.

Appendix 21: Focus Group Discussion Topic Guide for Self-Identified Diabetes Advocates

MRCZ/A/2833

Good day, and welcome to our session.

Thank you for taking the time to join us to talk about your views and perceptions of the provision of diabetes self-care that includes psychosocial aspects of living with Type 2 diabetes in Zimbabwe. You have been invited to take part as there is evidence that the views and insights of people living with T2DM, their social networks (family members and friends), and other key stakeholders such as yourself (diabetes patient support groups) are essential for better understanding the barriers to self-care and the design of interventions that improve diabetes care.
My name is Nyaradzo Chada. I am a doctoral student in Public Health in Zimbabwe, and I will be moderating this session today. There are no wrong answers – only different points of view. Please feel free to share your perspective, even if it differs from others'. We are just as interested in negative comments as positive ones. Sometimes, the negative comments are the most helpful. Your group discussions will be audio-recorded to ensure we do not miss anything important. People often share valuable points, and we cannot write fast enough to capture everything. Today, we will be on a first-name basis, and names will not appear in any reports. You are assured of complete confidentiality.
Let us begin.

Script for Online Meetings:

1. Do you all give consent to take part in this focus group discussion?

2. Log onto the online research session using the provided password

or link.

3. Turn off your video camera and select a blank background on

Zoom or Microsoft Teams.

4. Audio from the session will be recorded.

5. Enter your birth year when prompted.

Some Ground Rules:

1. Turn your mobile phone to silent or switch it off.

2. One person speaks at a time.

3. Everyone must participate in the discussion; there are no right or wrong answers.
4. You are not obligated to answer any question you are

uncomfortable with.

5. Respect each other's views and do not criticise others' comments.

6. Minimise side conversations.

7. All views and opinions are shared in confidence and must not be shared outside this group.

8. The session will be recorded and transcribed; contributors’ names will be anonymised.
9. The session will last up to one to one and a half hours.

If you feel uncomfortable during the discussion, please raise your hand or use the hand function on the platform. The research team will assist you. If you prefer, you may log off from the online session.

Kreuger (2002) ‘categories	**Example Opened Questions**
Opening Question	How long have you been leading peer support groups for people living with Type 2 diabetes? Could I ask you to describe your role?
Introductory Questions	From your experience, how actively do people with T2DM engage in their diabetes self-care routines (e.g., diet, exercise, medication adherence)? Can you share your thoughts and views? **Probe**

	• What are some of the most common challenges you observe that prevent people from engaging in self-care activities? What do you think are the key factors for sustaining diabetes self-care in the long term?
Transition Question	Have you noticed any disconnect between the advice given by healthcare professionals and how people with T2DM engage with diabetes self-care recommendations?
Key Questions	Given that Type 2 diabetes is a chronic condition, in your experience, how does emotional distress or stress affect someone's diabetes self-care practices? **Probe** • What emotional or psychological conditions are

	common among people with T2DM? • What emotional or psychological issues have you noticed that impact someone's ability to engage in diabetes self-care (e.g., fear, frustration, feelings of helplessness, depression, distress)?
Key Questions	What support do you think people with T2DM need as they deal with feelings of discouragement or burnout related to managing their diabetes? **Probe** Reactivation of social networks • Diabetes self-education • Referral to mental health professionals or services • The role healthcare providers play in motivating or discouraging diabetes self-care.

Examples of Themes Covered	Insights from peer support group leaders about how people living with Type 2 diabetes engage in self-care Barriers and enablers to diabetes self-care Psychosocial aspects of T2DM
Ending Question	Finally, is there anything that has not been discussed that you would like to talk about further with the group?
Debriefing	**Check how participants feel after the interview.** • Explore concerns and offer contacts for support.

Source: Francisco et al., 2022

Appendix 22: Confidentiality Agreement for the Translator of Qualitative Data

Name of Study:	
Study PI:	

As per the Faculty of Health and Medicine Research Ethics Committee at Lancaster University, all participants in the above study are anonymised. As a contracted interpreter/translator, you must not share identifiable information or data generated or secured through interpretation with any third party, in compliance with the General Data Protection Regulation (GDPR) as outlined in the Data Protection Act 2018 (United Kingdom). By signing this document, you agree to:

- Not to pass on, divulge, or discuss the contents of in-depth interviews and focus group discussions.
- Not to pass on, divulge, or discuss the contents of the audio recordings and written anonymised transcripts provided to you for translation to any third parties.
- To ensure that material provided for translation is held securely and can only be accessed via password on your local personal computer.
- To return translation materials to the research team when completed by the agreed deadline and do so in password-protected files.
- To destroy any audio and electronic files held by you and relevant to the above study immediately after translation or to return said audio files and written transcripts to the research team.

- To assist the University where a research participant has invoked one of their rights under data protection legislation.
- To report any loss, unscheduled deletion, or unauthorised disclosure of the audio material or written anonymised transcripts to any third parties, to the University immediately.
- Only act on the written instructions of the University/researcher.

- To, upon reasonable request, allow the researcher, or other University representative, to inspect the location and devices where the audio material and written anonymised transcripts are stored to ensure compliance with this agreement.
- To inform the University's Data Protection Officer if you believe you have been asked to do something with the audio material and written anonymised transcripts, which contravenes applicable data protection legislation
- To not employ any other person to carry out the work on your behalf.

Your name (Block Capitals):

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Address where interpretation/translation will take place:

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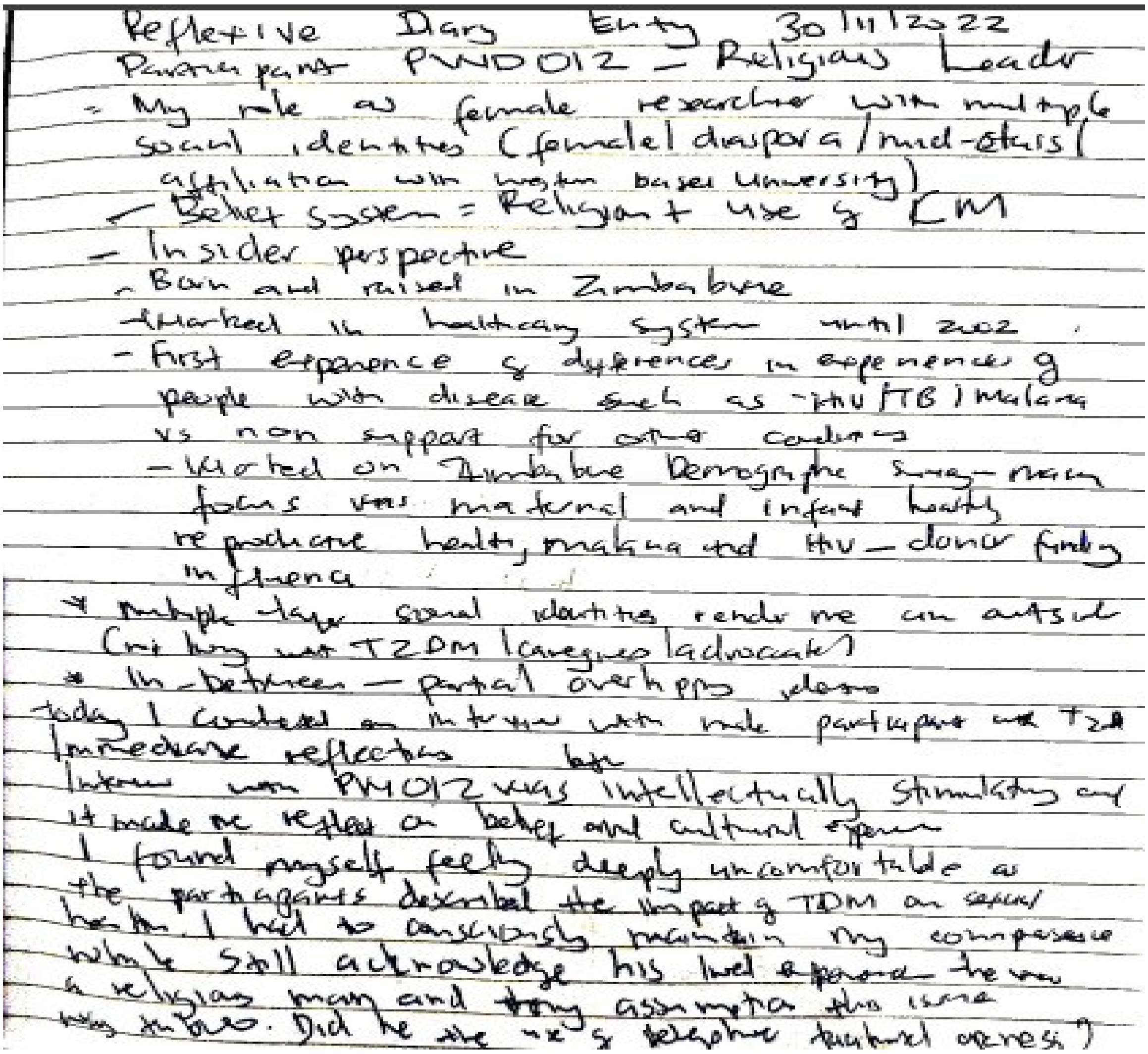
Your signature: _________________________________

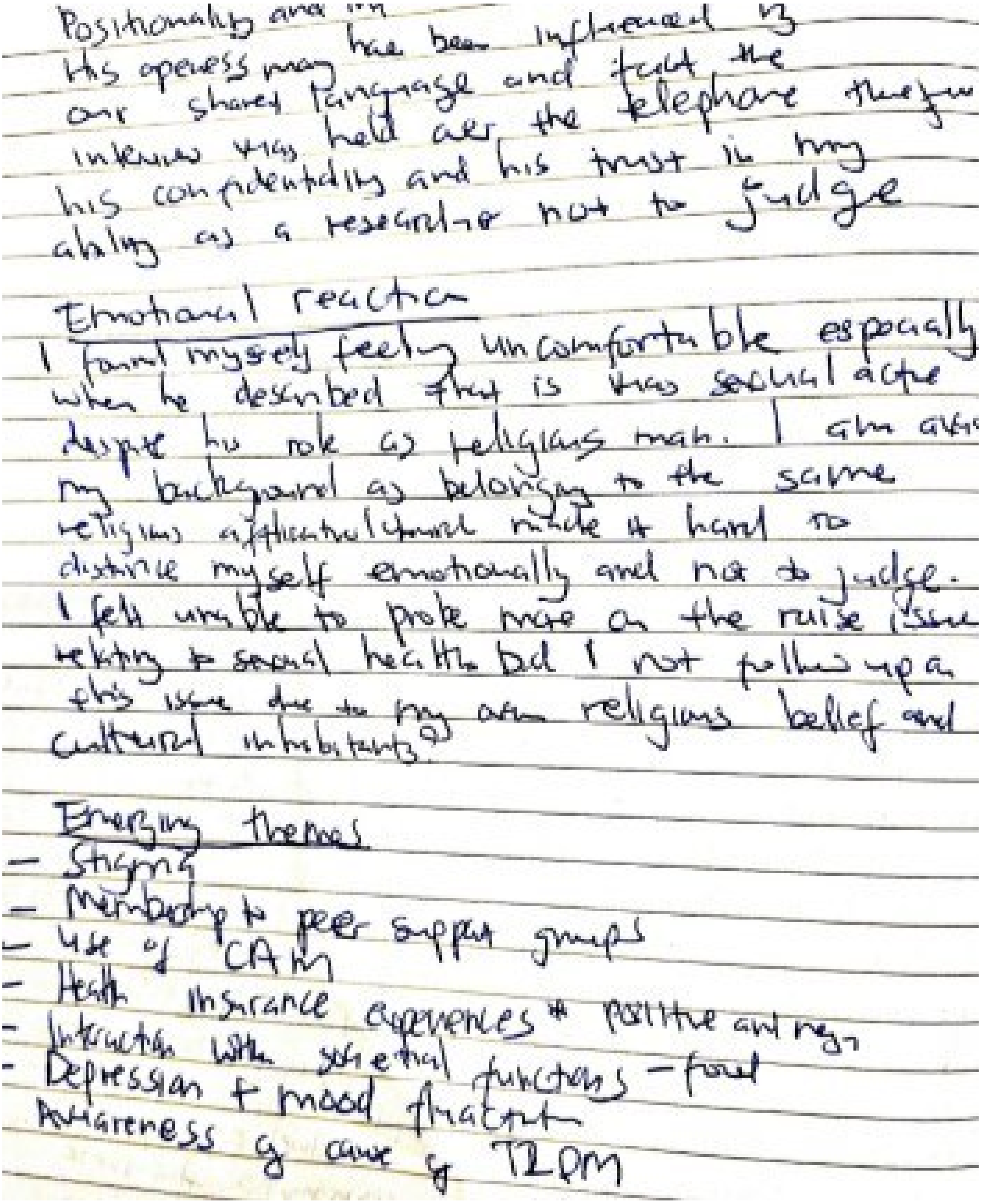
Date: ___________

Appendix 23: Reflexive Diary Entry

In-Depth Interview with Charles, a Person with T2DM (30/11/2022)



Reflexive Diary Entry 30/11/2022
Participant PWD012 – Religious Leader
= My role as female researcher with multiple
social identities (female/diaspora/mid-status/
affiliation with western based University)
– Belief system = Religion + use of CM
– Insider perspective
– Born and raised in Zimbabwe
– Worked in healthcare system until 2002.
– First experience of differences in experiences of
people with disease such as HIV/TB/Malaria
vs non support for other conditions
– Worked on Zimbabwe Demographic Survey – main
focus was maternal and infant health
reproductive health, malaria and HIV – donor funding
influence
* multiple-layer social identities render me an outsider
(not living with T2DM/caregiver/advocate)
* In-between – partial overlapping [illegible]
today I conducted an interview with male participant with T2DM
Immediate reflections after
Interview with PW012 was intellectually stimulating and
it made me reflect on belief and cultural experience
I found myself feeling deeply uncomfortable as
the participant described the impact of T2DM on sexual
health. I had to consciously maintain my composure
while still acknowledge his lived experience. He was
a religious man and [illegible] assumption that issue
was taboo. Did he [illegible] use of telephone limited openness?



Positionality and my

His openess may have been influenced by our shared language and fact the interview was held over the telephone therefo his confidentiality and his trust in my ability as a researcher not to judge

Emotional reaction

I found myself feeling uncomfortable especially when he described that is was sexual active despite his role as religious man. I am aw my background as belonging to the same religious affiliation/cultural made it hard to distance myself emotionally and not to judge. I felt unable to probe more on the raise issue relating to sexual health but I not follow up on this issue due to my own religious belief and cultural inhibitions?

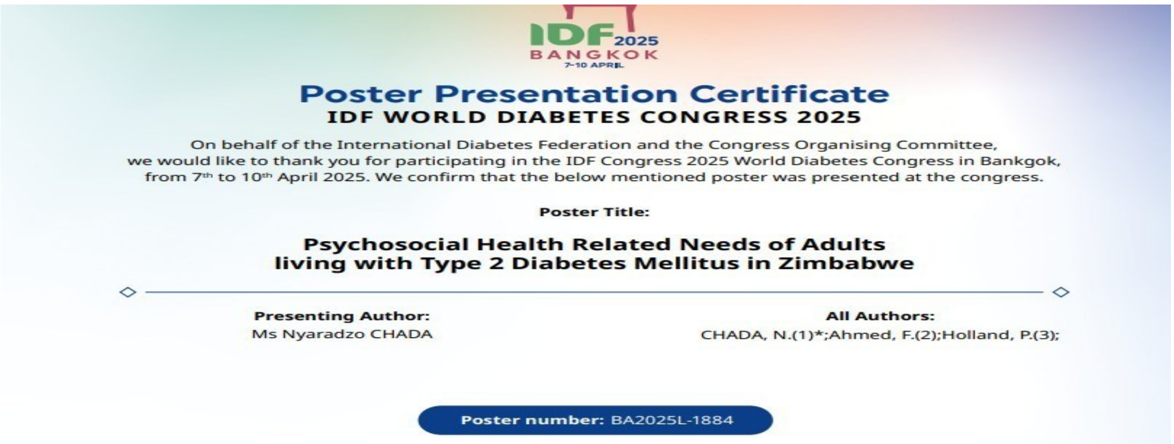
Emerging themes

- Stigma
- Membership to peer support groups
- Use of CAM
- Health insurance experiences * positive and neg
- Interaction with societal functions - food
- Depression + mood fluctuation

Awareness of cause of T2DM

Appendix 24: Study Disseminations

Poster Presentation at International Federation of Diabetes Conference, Bangkok, Thailand, 7–10 April 202



IDF 2025
BANGKOK
7–10 APRIL

Poster Presentation Certificate
IDF WORLD DIABETES CONGRESS 2025

On behalf of the International Diabetes Federation and the Congress Organising Committee, we would like to thank you for participating in the IDF Congress 2025 World Diabetes Congress in Bankgok, from 7th to 10th April 2025. We confirm that the below mentioned poster was presented at the congress.

Poster Title:

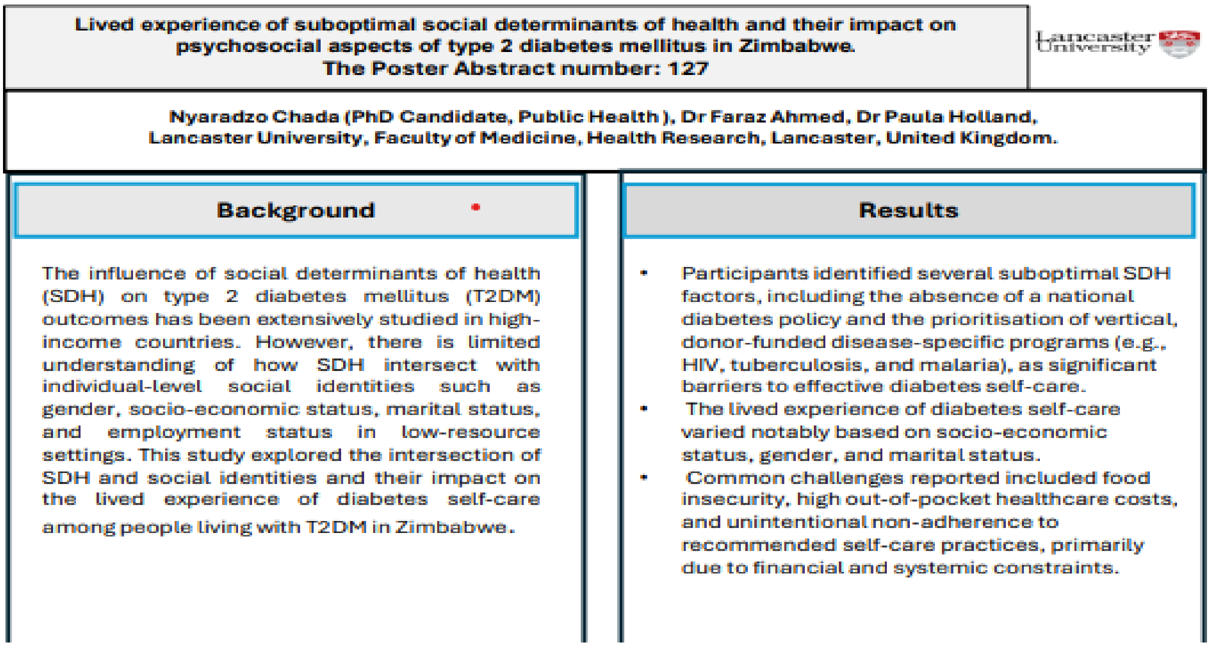
Psychosocial Health Related Needs of Adults living with Type 2 Diabetes Mellitus in Zimbabwe

Presenting Author:
Ms Nyaradzo CHADA

All Authors:
CHADA, N.(1)*;Ahmed, F.(2);Holland, P.(3);

Poster number: BA2025L-1884

Poster presentation :Australasian Diabetes Congress, held at the Gold Coast Convention and Exhibition Centre, Gold Coast, Australia, from August 20 to 22, 2025.



Lived experience of suboptimal social determinants of health and their impact on psychosocial aspects of type 2 diabetes mellitus in Zimbabwe.
The Poster Abstract number: 127

Lancaster University

Nyaradzo Chada (PhD Candidate, Public Health), Dr Faraz Ahmed, Dr Paula Holland,
Lancaster University, Faculty of Medicine, Health Research, Lancaster, United Kingdom.

Background

The influence of social determinants of health (SDH) on type 2 diabetes mellitus (T2DM) outcomes has been extensively studied in high-income countries. However, there is limited understanding of how SDH intersect with individual-level social identities such as gender, socio-economic status, marital status, and employment status in low-resource settings. This study explored the intersection of SDH and social identities and their impact on the lived experience of diabetes self-care among people living with T2DM in Zimbabwe.

Results

- Participants identified several suboptimal SDH factors, including the absence of a national diabetes policy and the prioritisation of vertical, donor-funded disease-specific programs (e.g., HIV, tuberculosis, and malaria), as significant barriers to effective diabetes self-care.
- The lived experience of diabetes self-care varied notably based on socio-economic status, gender, and marital status.
- Common challenges reported included food insecurity, high out-of-pocket healthcare costs, and unintentional non-adherence to recommended self-care practices, primarily due to financial and systemic constraints.