An exploration of language used to negotiate treatments and adherence within medical consultations for those with type 2 diabetes

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An Exploration of Language Used to Negotiate Treatments and Adherence within Medical Consultations for Those with Type 2 Diabetes

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Abstract

Type two diabetes is a chronic condition which relies on the success of individual's self-management to adhere to recommendations. Psycho-social factors and communication are influential factors in shaping individuals' behaviours and health-related decisions. Education is recommended to engage patients with their care. However, interventions are unsustainable, meaning more effective strategies are needed to engage individuals over time. Along with the progression of diabetes, patients' care needs and perceptions also change, meaning communication plays a crucial role in the way health beliefs are developed.

This study aims to add to the understanding of how perceptions of adherence are constructed in medical consultations by focusing on the linguistic enactment of the consultation, and how the form and function of questions posed within the medical encounter are employed to communicate recommendations.

Seven individuals with type two diabetes medical consultations and semi-structured interviews were audio recorded and analysed using an interactional sociolinguistically informed perspective. Participants attended an outpatient clinic for the first time, enabling the researcher to capture their initial contact with the consultant, the analysis focused on data obtained from medical consultations, which revealed a typology of questions that emerged throughout different phases of the consultation. Adherence was negotiated throughout the interaction as participants used various forms of questions to achieve their linguistic goals. Similar typologies of questions emerged throughout all datasets, however patients and participants used similar questions for different functions. Patients should be presented with opportunities to inform healthcare professionals of their experiences and perceptions to assist the consultant. Implications for education were also identified.

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Chapter 1: Introduction

Type two diabetes is a complex condition which requires high maintenance and effective self-management. Individuals diagnosed with diabetes are required to modify various aspects of their lifestyle to adequately control the condition and ensure the risk of complications to major organs are minimised. Evidence suggests non-adherence to healthcare recommendations are associated with poorer diabetes management and long-term outcomes (Williams et al. 2009). In view of this it is important to understand factors that influence health related behaviours, particularly in relation to treatment adherence (Lippa, Klein and Shalin 2008). A review of the literature suggests there is a need for further research in understanding the role of adherence in relation to type two diabetes (Carpenter 2012). This research will explore how perceptions of adherence relating to the management of type two diabetes are understood within medical consultations.

The following chapter provides a foreword to this research by providing an overview of type two diabetes and the complexities involved with this condition. Chapter two will provide a review of the literature by exploring notions of adherence in relation to education, communication, as well as psycho-social factors that have found to be influential in health related decision-making processes.

1.1 Setting the Scene

Diabetes mellitus, more commonly known as type two diabetes is a lifelong metabolic condition whereby the pancreas produces an insufficient amount of insulin to control the amount of glucose in the blood. As a result, blood sugar levels become too high (hyperglycaemia) which can cause health complications including eye, nerve and foot damage (World Health Organisation (WHO) 2011, Department of Health (DoH) 2012). Furthermore, it means an increased risk of kidney failure, nerve damage and cardiovascular disease (National Institute for Health and Clinical Excellence (NICE) 2015, DoH 2001). A diagnosis of type two diabetes is obtained through a blood test known as glycated haemoglobin (HbA1c), which provides an individual's average blood glucose level over the previous three months. Clinically, a HbA1c level of 6.5% would be an indication of type two diabetes (WHO 2011). Although HbA1c is primarily a diagnostic tool, it is also a means by which clinicians review the success of an individual's current management plan and give advice accordingly.

Many individuals with a diagnosis of type two diabetes also have a diagnosis of obesity (WHO 1999). Clinically obese individuals are at a higher risk of developing type two diabetes, which becomes more prevalent as an individual's BMI increases (NICE 2014). An increase in a person's weight causes insulin resistance (Al-Goblan, Al-Alfi and Khan 2014). This is because

changes in an individual's metabolism alters insulin secretion which becomes insufficient by overcompensating for this change and causes insulin resistance (WHO 1999).

1.2 Detection and Complications of Type Two Diabetes

An individual with gross hyperglycaemia may present with symptoms including frequent urination, feelings of thirst or fatigue (DoH 2001). Diabetes may also be detected through other health complaints including trauma, infection and circulatory issues (WHO 1999). However, diabetes may present itself asymptomatically in those with blood glucose values above the normal clinical range. A clinical presentation can be difficult to recognise and may go undiagnosed or overlooked for years if an individual's hyperglycaemia remains asymptomatic (Barko et al. 2011). This has implications for the way in which individuals perceive the success of their self-management (Berenguera et al. 2016). It has been suggested that individuals' perceptions of their illnesses are influenced by past experiences and that they are likely to compare their understanding of managing a long-term condition to having an acute illness (Leventhal, Meyer and Nerez 1980). However, the chronic and progressive nature of diabetes means it cannot be treated in a similar way. Therefore, if individuals associate the success of self-management with the presence of symptoms, their perceptions of effective blood glucose control may not be as accurate as expected (Nguyen 2014). This may also have negative consequences for adherent behaviours if an individual feels their current management strategies are sufficient.

For individuals who present asymptomatically, a diagnosis is confirmed through blood tests or an oral glucose tolerance test. If results do not provide confirmation, regular monitoring is advised to ensure any changes can be tracked by a healthcare professional and actioned where necessary. Currently, there is no cure for type two diabetes meaning the emphasis is to take preventative measures, particularly with individuals entering pre-diabetes stages where health professionals provide early intervention to control glucose levels (NICE 2015). Pre-diabetes can be diagnosed by taking a HbA1c blood test which may determine if blood glucose levels are high but not yet clinically significant to have a formal diagnosis of diabetes. Early detection and adequate treatment are important to preserve the body's functioning as the progressive nature of this condition increase the risk of developing further comorbidities (NICE 2012). Regular monitoring of blood glucose, blood pressure, cholesterol and weight assist in ensuring further issues do not arise (Tanenbaum et al. 2015).

Inadequate diabetes management can have a dramatic impact on an individual's quality of life (Ho et al. 2007) and long-term health outcomes (Scollan-Koliopoulos, Walker and Bleich 2010) including hospitalisation, amputation, glaucoma and diabetic retinopathy (WHO 2016).

1.3 Cost Implications

Diabetes is increasingly prevalent with over 3.2 million individuals in Britain being diagnosed in 2013, 90% of which were characterised with type two diabetes (NICE 2015). The cost impact has been illustrated by a recent audit by Diabetes UK (2014) that found 16.5% of hospital inpatients are individuals living with diabetes. Further findings suggest that 80% of direct costs related to diabetes in the National Health Service (NHS) are linked to diabetic complications. Annual costs related to an individual's inpatient hospital admissions have been estimated at around £2,500 per patient (Kanavos, van den Aardweg and Schurer 2012). This is further evidenced by statistics that reveal over 100 amputations are undertaken weekly due to diabetic complications (Diabetes UK 2014). Individuals are referred to specialist services to manage potential health risks, resulting in an increase in the NHS expenditure (WHO 2016). It has been estimated that diabetes care costs around 10% of all spending in the UK healthcare system (NICE 2015).

1.4 Therapeutic Options for Type Two Diabetes Management

Lifestyle changes such as exercise, weight loss and adjustments to dietary intake, as well as prescribed drug therapies, may be recommended for the management of diabetes (Booth et al. 2013, NICE 2015). Where diet and lifestyle changes are ineffective, oral hyperglycaemic therapies are prescribed as the next line of treatment to assist in regaining control of an individual's blood glucose levels (Wu and Liu 2016).

There are various types of anti-diabetic treatments that lower blood glucose in different ways. Some agents increase insulin sensitivity by targeting specific organs known as biguaindes and thiazolidinediones, others work by increasing the amount of insulin secreted in the pancreas known as secretagogues, whilst a newer class of drugs decrease the amount of glucose absorbed from the gastrointestinal system (injectable incretin mimetics). Traditional oral anti-diabetic drugs including Metformin and Glitazones (biguaindes and thiazolidinediones), Sulfonylureas (secretagogues) and alphaglucosidase inhibitors are still used in clinical practice. However, in recent years, newer drugs known as SGLT-2 inhibitors and dipeptidyl peptidase- 4 inhibitors have been introduced and are used alongside traditional therapies to assist with glucose control by promoting loss of glucose in urine (NICE 2016).

NICE (2015) recommend prescribing Metformin as a primary monotherapy before considering other glucose lowering drugs. Metformin therapy assists in lowering blood sugars by decreasing glucose release from the liver which increases glucose uptake, therefore improving insulin sensitivity. If an individual's blood glucose remains unstable or becomes ineffective, alternative

or additional medications may be prescribed alongside Metformin. However, unwanted side effects such as nausea and weight gain may negatively affect individual's adherence (Khan, Lasker and Chowdhury 2011).

As the condition progresses individuals may be advised to take a combination of oral hypoglycaemic drugs, injectable subcutaneous insulin, as well as therapies for other co-morbidities such as hypertension to reduce cardiovascular risk (NICE 2015). Alongside this, it is essential that individuals possess a good understanding of their insulin requirements in order to calculate and administer the therapy at the optimal dose. This may be challenging for those experiencing psychological resistance as individuals may express concerns around the process of injecting themselves (Krall et al. 2015).

If an individual is apprehensive or expresses reluctance to commence an insulin therapy regime, this may be particularly significant in regards to how effective their future self-management may be. This may be particularly true if it is believed that the benefits of controlling diabetes are outweighed by the negative experiences of adhering to therapeutic regimens (García-Pérez et al. 2013). Adequately addressing an individual's concern is a major factor in overcoming barriers to treatment adherence (Chao, Nau and Aikens 2007). The WHO (2016) recommends that individuals living with diabetes should have access to a team of specialist healthcare professionals to receive person-centered care, education and support. It has been suggested that positive attitudes have been associated with perceiving the benefits of adherence (Polonsky et al. 2011). Furthermore, a willingness to change behaviours and follow recommendations are crucial in achieving successful self-management (Greenfield et al. 2011).

Chapter 2: The Literature Review

There is a plethora of research regarding the topic of adherence among individuals with type two diabetes, much of which have been interventional studies aiming to improve adherence in clinical practice (Fisher et al. 2016; Spain et al. 2016; Tiktin, Celik and Bernard 2016). More recently, psycho-social factors have been noted as being significantly influential, particularly at the point of making treatment related decisions (Gosse 2008; Guénette et al. 2016). It is therefore important that individuals' own perceptions of adherence are accounted for when treatment options are being considered, which relies upon effective communication and mutual understanding of both a healthcare professional and a patient's expectation of the recommendations that are being discussed.

A review of the literature has been undertaken to assist in answering the research question, "how is adherence linguistically negotiated between the patient and consultant, specifically focusing on the role of questions in medical consultations". To understand and identify factors that facilitate or act as barriers to adherence among patients with type two diabetes, a review of the literature around topics of self-management, patient perceptions, beliefs and understanding of adherence will be explored.

Literature from the following electronic databases PsychInfo, PsychArticles, Medline, ASSIA and CINAHL were used to examine published literature. The search was limited to papers and documents published in English, from 2007 onwards. Medical subject headings combined with key words were used as a comprehensive search strategy which assisted in examining the relevance of papers (see Appendix A). RefWorks management software was used to categorise, store and retrieve relevant publications.

The literature reviewed is intended to provide a brief overview of adherence in diabetes, specifically in relation to possible explanations for non-adherence. However, it should be noted that this review is not exhaustive.

2.1 Adherence

Adherence and compliance are often used interchangeably within the research literature. Compliance is defined as the way in which a patient's behaviour matches a healthcare professional's recommendations (WHO 2003). However, it has been suggested that this implies these terms are prescriptive rather than a collaborative decision, made with both parties' involvement (Horne et al. 2005). Adherence is defined as the extent to which an individual demonstrates behaviours that align with the health-related recommendations agreed with a healthcare professional (WHO 2003) and signals a shift towards patients' preferences and

autonomy in decision making. In consideration of this, the term adherence will be referred to throughout this research in relation to shared decision making.

2.2 Adherence in Type Two Diabetes

The aim of therapeutic intervention in type two diabetes is effective management of the condition, which rests mainly in the hands of the individual (Lee et al. 2015). In this context, non-adherence remains a critical issue (Blackmon et al. 2016), making glycaemic control difficult to stabilise (Polonsky 2007). Challenges are in part due to individuals requiring a variety of self-management behaviours which may require both medical intervention and lifestyle changes (McIntosh et al. 2010). Current interventions have proven successful in the initial stages of management. However, their long-term effectiveness is questionable (Vég, Rosengvist and Sarkadi 2007).

Research has focused on barriers and facilitating factors in an attempt to understand the reasons behind non-adherence (Ahola and Groop 2013). Having an in-depth understanding of an individual's perceived self-management behaviours has been identified as key to facilitating and sustaining adherence in healthcare (Hu et al. 2012). However, to do this healthcare professionals should determine whether individuals are facing any potential barriers to self-management. For individuals with type two diabetes there is a requirement to adopt and maintain health related behaviours which play a large part in their daily living and may therefore be perceived as a burden or barrier to self-management.

Research undertaken by Berenguera (2016) confirmed this after conducting interviews with forty-three type two diabetic individuals from two healthcare centres in Catalonia. Individuals from this study reported feeling frustrated at having inadequate metabolic control and knowing that the condition was progressing despite being adherent to recommendations. Undertaking semi-structured interviews assisted in designing an intervention to improve the ways in which treatments are discussed with patients experiencing uncontrolled blood sugars by stressing the importance of understanding reasons behind non-adherence.

A further study by Shirazian et al. (2016) explored twenty-three type two diabetics' views of self-management through semi-structured questionnaires and focus groups to identify potential barriers. A thematic analysis of the data identified the burden of self-management as a key theme. Individuals reported feeling frustrated at having to maintain their current health rather than being able to improve it. Others reported feeling overwhelmed and unsupported by self-management requirements. Findings also suggested family and social support played an influential role in self-management. Individuals reported that family members could be

perceived as both barriers and support. They also spoke about the role of food and the way in which food was negotiated because at times family members tried to control food choices through negative reinforcement. The authors suggest that behavioural and medical interventions as well as education and support should be provided and accessible for family members. Although this study offers valuable insight into individuals' experiences, it should be noted that participants had other chronic health conditions which may have been perceived as a burden. Furthermore, the conservative sample size may make these findings unrepresentative of a general population. However, they do highlight the need to gain in depth knowledge of an individual's context and motives which is crucial in addressing barriers to self-management. Interventions that take an individual's socio-cultural factors into account should be taken into consideration.

A cross-sectional study by Halali et al. (2016) recruited one hundred and forty-six individuals with type two diabetes to complete a questionnaire designed to assess adherence to dietary recommendations. Results noted the importance of accounting for socio-cultural factors as they suggested barriers to dietary recommendations included having a lack of family support, difficulties with meal planning and cited stress related eating as an issue. Although this research was undertaken with an Iranian population, the authors argue that the complexities involved with these issues can also be seen in western countries. The potential bias from self-reported questionnaires used in this research should be not be dismissed, however the authors highlight the methodological challenges involved in gaining an in-depth understanding of complex issues such as adherence which should be taken into consideration.

Lee et al. (2016) also acknowledge the importance in recognising the challenges involved with eating habits, as thirty-four males with type two diabetes reported difficulties around avoiding foods due to the ease of availability. Findings from four focus groups reported challenges to dietary requirements as food played a cultural role within communities. Although undertaken with an entirely male population, the study underlines the importance of tailoring culturally relevant and individualised support. Purnell et al. (2016) also cite the importance of taking socio-cultural factors into consideration as ethnicity and cultural belief systems can influence adherence. In some communities, individuals reported experiencing stigma from being diagnosed with type two diabetes. Participants also reported having limited access to healthy foods, making it challenging to adhere to dietary recommendations. Undertaking focus groups enabled a better understanding of how local practices and beliefs affect the likelihood of individuals following healthcare professionals' advice.

A study by Kneck et al. (2014) interviewed thirteen newly diagnosed participants with type two diabetes about their health experiences over a three-year period. They found individuals' belief systems changed over time, which lead them to new understandings about their condition which consequentially had a significant impact on quality of life. Conducting interviews over a period of time enabled changes in belief systems and experiences in managing diabetes to be observed. However, findings may only apply to newly diagnosed populations, compared to individuals who have managed diabetes for a number of years. Furthermore, although interviews were based around individuals' experiences of learning to manage diabetes, there was no enquiry into individuals' own understandings of diabetes management and what adherence meant to them.

Belief systems are also influential in adhering to treatment regimens and health related behaviours (Sapkota, Brien and Aslani 2016). A study by Sapkota, Brien and Aslani (2016) interviewed forty-eight Nepalese individuals regarding their experiences of managing type two diabetes. Findings suggested many were hesitant to start recommended medical regimens, with many individuals having different opinions regarding their effectiveness and some having negative feelings towards medications. Several participants preferred unconventional recommendations such as natural remedies which they considered more acceptable. These perceptions derived from cultural belief systems that had developed over time. Although it could be argued that these findings are not transferable, they have been supported by Stevenson (2016) who found that individuals' belief systems are shaped by environmental and cultural factors which can make diabetes management challenging. A qualitative study by McElfish et al. (2016) also support this, as data collected from focus groups involving forty-one Marshallese participants suggested that if individuals hold the belief that type two diabetes is inevitable, it is likely that medical treatments and self-management strategies will not be perceived as beneficial but as something that is harmful in the long term. Although findings may be relevant to the Marshallese community, this research highlights the need to individualise healthcare services and education.

Another qualitative study undertaken by Baggio et al. (2013) argues diabetes management should be tailored to an individual's beliefs and care needs because individuals' own perceptions of a condition vary. Semi-structured interviews with seven individuals suggested that those who perceive diabetes as being problematic may experience more challenges than those who are able to overcome barriers and maintain a better quality of life. The study suggests healthcare professionals should provide people with support to manage their diabetes by encouraging positive health-related behaviours. Furthermore, healthcare recommendations made during medical consultations should be explored to ensure patients are being effectively

supported (Dhippayom and Krass 2016). As belief systems are key to engaging in health-related behaviours, tailored education programmes should be taken into consideration (Carbone et al. 2007). Gaining a better understanding of these factors will assist in the development of more efficient interventions which will support patients over a sustained period of time (Lippa and Klein 2008).

Wiliiams et al. (2009) suggest individuals have increased motivation to adhere to healthcare recommendations when they feel competent and perceive having the autonomy to manage their condition. Furthermore, they suggest that these perceptions develop when individuals feel that they are making a choice to follow advice because it is important to them, rather than due to pressure from a healthcare professional. In view of this, shared decision making is crucial to ensure recommendations are aligned with individuals' views and care needs (Tamhane et al. 2015).

In addition, Murphy et al. (2015) suggest motivation plays a key role in adherence to health-related behaviours. Although the importance of obtaining knowledge has been acknowledged, it has been proposed that for this to be translated into behaviours one must be motivated to do so (Aponte 2014). There are variety of approaches that can assist with behaviour change and support self-management which may include the provision of education and advice. However, alternative approaches take psycho-social factors into account which aim to have a better understanding of an individual's beliefs that prevent adherence to healthcare recommendations (Pretorius and Steel 2015).

Al-Hassan et al. (2016) found intrinsically motivated individuals who engage in something out of interest or enjoyment, had better clinical outcomes and quality of life than those motivated by reward systems or external pressures. They propose that intrinsic motivation can be developed through various behaviour change interventions including self-mastery, motivational interviewing and counselling during medical consultations. A further finding from this study suggests that intrinsically motivated individuals are more likely to be associated with behaviours such as goal attainment and effective task involvement which are also linked to self-efficacy. They note that due to the complex nature of diabetes, individuals must possess a certain level of motivation in order to manage it successfully.

Previous research suggests psycho-social factors play a key role in the development of an individual's belief systems and whether they are motivated to undertake recommendations that are required to manage diabetes (Bernecker and Job 2015). Sabourin and Pursley (2013) suggest that prior to making recommendations, an assessment should be undertaken to understand whether an individual is willing to make the recommended lifestyle modifications. If there are

indications to suggest the individual may experience potential barriers, healthcare providers should focus on interventions that encourage behaviour change to support self-management (Laranjo et al. 2015). Often healthcare professionals take a biomedical view, focusing on symptoms rather than attempting to understand how an individual is coping with their condition. However, listening to an individual's concerns and exploring feelings before reviewing any clinical measurements has been found to be a more effective way of supporting patients (Dellasega et al. 2010).

Behaviour change strategies include motivational interviewing, goal setting and behaviour change counselling (Miller and Rollnick 2002). The aim of these interventions is to motivate and encourage individuals to engage in health behaviours and modify belief systems (French, Wade and Farmer 2013). Exploring an individual's thoughts and feelings relating to self-management means that any concerns can be addressed. Furthermore, behaviour change interventions can increase an individual's confidence in their abilities which may improve self-management and thus increase adherent behaviours. Sabourin and Pursley (2013) stress the need for healthcare professionals to acknowledge the challenges involved in self-management and provide individuals with reassurance. In doing this individuals may feel they can openly discuss their feelings and any issues they are experiencing. They also highlight the need for individuals with type two diabetes to learn to manage their emotions in challenging situations. In doing this, individuals motivational levels and engagement in health behaviours will remain intact. Stress management and problem-solving skills have been shown to be beneficial as well as seeking support from social networks. More recently cognitive behavioural therapy has emerged and has shown to reduce emotional distress. These therapies can also be used to modify negative beliefs and thoughts about diabetes and self-management (Laranjo et al. 2015).

A study by Dellasega et al. (2010) found that motivational interviewing had a positive effect on individuals, assisting them to feel empowered and confident in their abilities. Their findings revealed motivational interviewing provided empowerment, emotional support, communication skills and motivation important aspects. Motivational interviewing engages individuals by exploring their underlying motivation for change using reflective listening, therapeutic communication to encourage behaviour change and increase feelings of empowerment (Murphy et al. 2015). However, implementing an intervention such as this during medical consultations may be challenging. In this study, medical consultations took approximately one hour which may not be practical in many healthcare settings. Furthermore, the need for healthcare professionals to upskill themselves in order to undertake interventions effectively should also be taken into consideration. However, it does highlight the use of motivational interviewing as a

therapeutic strategy for healthcare professionals caring for individuals with chronic conditions such as diabetes. It should also be noted that details about how the interventions were communicated during medical consultations were not provided, an issue that has been found to be across the breadth of research within this field.

Goal setting also encourages individuals to engage in their own healthcare and encourages positive health related behaviours (Yu et al. 2015). It should be ensured that goals are realistic and measurable so that progress can be accounted for (Sule 2014). It is important to support individuals to make small changes so that they can work towards bigger behaviour changes which are more sustainable in the long term. When achievements have been made, individuals confidence in their own abilities to change their behaviours increase (Tol et al. 2013). Healthcare professionals should acknowledge successes which will motivate individuals to continue pursuing their goals. Furthermore, a limited number of goals should be set at any one time to ensure individuals are not overwhelmed and feel that their goals are manageable to achieve. A cross-sectional study by Tol et al. (2013) recruited six hundred and eighty-eight type two diabetics who completed a diabetes empowerment scale. Findings suggested a strong association between achievable goal setting and empowerment which was also linked to education.

A study by Gorter et al. (2011) assessed patients with type two diabetes opinions in taking responsibility for their own care that included goal setting. They concluded that goal setting may not be an effective intervention if patients preferred that healthcare professionals undertake this responsibility. They put forward the argument that individuals should be assessed prior to the implementation of any strategies to understand their preferences and willingness to engage in health-related behaviours. A survey of two hundred and ninety-two patients with type two diabetes by Kucukarslan et al. (2009) found that individuals were more likely to work towards their goals if they experienced good communication with their healthcare professional and felt confident in managing their condition. Participants were also able to recognise potential barriers that would inhibit goal achievement. These included money, concerns around side effects and ineffectiveness of medication. However, limitations of this study have been noted. Due to the population and age of participants in this study, these results may not represent the general population, as younger participants may have different issues that prevent adherent behaviours. Despite these limitations, this study highlights the need to consider contributing factors that may influence the likelihood of achieving goals. Effective communication with healthcare professionals was found to be the strongest influence in helping individuals to achieve their goals, meaning understanding what is communicated for these strategies to be a success is crucial.

A qualitative study undertaken in America by Beverly et al. (2012) also found communication between healthcare professionals and patients to play a key role in achieving goals. The study investigated the perceptions of thirty-four type two diabetic patients and healthcare professionals in regards to the challenges of achieving therapeutic goals. Findings suggested that healthcare professionals felt responsible for the difficulties patients were experiencing in achieving goals. They felt that this was due to communication difficulties, time limitations as well as patients' expectations, however individuals' lifestyle or self-beliefs were not taken into consideration. Healthcare professionals did however highlight a lack of training as they were unsure how to adequately support patients who were experiencing challenges. Healthcare professionals also admitted that they did not know how patients felt, indicating a lack of openness and rapport. Patients on the other hand, felt that unmet goals reflected their own failures, regardless of whether they felt responsible for meeting their goals. Challenges were attributed to feeling unable self-manage or adhere to recommendations which consequently led to internalising negative feelings. This research highlights how important healthcare professional and patient relationships are and emphasises the need for open communication within medical consultations. Building good rapport is crucial for shared decision making, setting patient orientated goals and encouraging discussion about any concerns regarding healthcare recommendations. In order to have a greater understanding of what constitutes effective communication, there is a need for future research to explore the medical consultation in depth. This will assist an understanding how healthcare professional-patient relationships are built, how recommendations are communicated and how shared decisions are negotiated.

There is also a need to have greater insight into the specific details of studies for replication purposes. By replicating interventions that have previously resulted in having a positive effect on patients' adherence to recommendations, a better understanding about what makes an intervention effective will become clear. To do this, detailed content of the interventions need to be provided, so that what is communicated during the consultation can be understood. This was noted by Michie et al. (2013) who found variation not only in the content of research published, but also found discrepancies regarding the different terminology used to describe interventions. They propose that for the evaluation of behaviour change interventions to be possible, it is crucial that content within successful interventions are identified and reported. The authors also note the discrepancies between different terms used to describe the same intervention and suggest standardised definitions should be available. Their work aimed to build on the pivotal work of Abraham and Michie (2008) who originally tried to combat this issue by developing a 26-item taxonomy to assist in classifying behaviour change techniques. Despite this, Michie et

al. (2013) noted more comprehensive descriptions of interventions were necessary and developed a newer taxonomy which they believed to fulfil this requirement. However, it should be noted that this taxonomy was only applicable to eating habits and exercise, meaning there is still a need to understand whether this can be extended to other healthcare recommendations.

In view of this, uncovering what happens linguistically within medical consultations would be an effective way to understand the co-construction of these interventions between the patient and healthcare professional. Although interventions have found to be successful in assisting behaviour change, without fine details of the communication constructed and negotiated within medical consultations, it is difficult to understand the context and how patients and healthcare professionals presented themselves during interventions. Gaining insight into the linguistic exchange between the two parties will assist in the development of more effective strategies, but it will also provide a foundation of how to problem solve in different situations that have had successful outcomes. Mendenhall et al. (2016) highlight the importance of understanding what meanings individuals give to their condition and how this is culturally constructed within society. They suggest utilising methodologies that allow the exploration of narrative to develop interventions that take into consideration an individual's social and cultural context. Berenguera (2016) note the importance of exploring patient discourse and argue that this is an essential element in increasing motivation and engaging individuals to adhere to healthcare recommendations.

2.3 Measurements of Adherence

Traditionally, body mass index (BMI) and HbA1c blood test have been viewed by healthcare professionals as objective measures of adherence (WHO 2011). In taking this biomedical view, an individual's experience of managing diabetes is not taken into consideration. Further to this, assessing adherence is currently problematic due to the way in which healthcare recommendations are communicated.

An example of this was found in a qualitative study by Brackney (2011) as no universal guidelines exist around self- monitoring of blood glucose levels, meaning patient recommendations are not standardised in clinical practice. Findings from eleven interviews suggested patients who had recently been diagnosed with type two diabetes used self-monitoring to reconfirm that their diabetes remained, despite feeling asymptomatic. Patients felt more in control when they were competent to manage their diabetes but were more likely to experience difficulties accepting their diagnosis if they perceived that they hadn't been at risk of developing the condition. Differences between patients and healthcare professionals' perceptions suggested the reasons why physicians utilise self-monitoring blood glucose level

readings there were not clearly communicated. In this study, patients expected healthcare professionals to change treatment recommendations based on their previous readings, whilst healthcare professionals anticipated patients would use readings as guidance for their self-management behaviours. Although results may only represent newly diagnosed diabetics, the authors suggest that self-monitoring blood glucose levels should be encouraged as a way of developing problem solving and self-management skills.

Berenguera et al. (2016) suggest there is still a lack of understanding relating to patients' experiences of adherence. This implies further research is needed to develop more encompassing explanations of patients' perceptions (Claydon-Platt, Manias and Dunning 2014). Acquiring a greater understanding of factors that influence adherence could encourage individuals to engage with their healthcare and provide them with better support (Ahrari et al. 2014). Ahrari et al. (2014) argue that barriers to adherence should be understood in depth in order to successfully address them. After recruiting two hundred and eighteen individuals with type two diabetes, validated questionnaires about adherence were completed. Results found a relationship between perceived cognitions and adherence to medical regimens, suggesting strategies to improve adherence should focus on patients' cognitions.

In light of these issues, psychologically focused questionnaires and validated scales have been developed to provide potential reasons behind non-adherence. However, Guénette et al. (2016) argue self-reported measures are limiting by not providing accurate estimates of adherence. Assessment scales have also been used to flag any potential issues, however individuals' personalised management plans are not taken into account (French, Wade and Farmer 2013).

A study by Figueiredo, Snoek and Barreto (2013) explored two hundred and eighty-two type two diabetics and their healthcare professionals' perceptions of diabetes management. Results suggested both parties had differing views as several patients did not fully understand the recommendations made to them, suggesting non-adherence may occur because the information provided is misunderstood. Furthermore, healthcare professionals' perceptions of the number of patients adhering to their recommendations were inaccurate. Although questionnaires used in this study were developed with patients in Brazil, utilising this methodology means an in-depth, rich understanding of patients' perceptions cannot be accessed. However, as noted by the authors, it would be beneficial to have additional information regarding the communication that is enacted between the consultant and patient within the medical consultation. Despite these limitations, findings from this study highlight the importance of looking beyond traditional

diabetes care, emphasising the need to develop more effective interventions in healthcare services.

However, a study by de Vries et al. (2014) suggests individuals do not adhere to healthcare recommendations through a conscious, informed decision. They explored one hundred and thirty-three non-adherent type two patients' medication beliefs using validated questionnaires. Findings suggested patients' concerns surrounding medical regimens resulted in taking incorrect dosages of medications. Side effects were also common reason for discontinuing medications as patients concerns outweighed the perceived benefits of taking medications, suggesting belief systems play an influential role in adhering to recommendations. Although results from this study are based in self-reported measures which may be biased, the importance of employing qualitative methodologies to understand patients' beliefs about treatment regimens is highlighted.

This is also highlighted by Girdwood (2004) who assessed how predictive the Health Belief Model is with additional self-efficacy measures, regarding self-management behaviours of patients with type two diabetes. One hundred and eighteen patients were recruited from private healthcare clinics completed validated questionnaires measuring adherence, self-efficacy and health beliefs. Various healthcare recommendations were investigated, including adherence to medication, diet and exercise. Results suggested while medical regimes are explicitly prescribed, exercise and dietary regimes are often recommended through general guidance, allowing for the possibility of misinterpretation. The authors note the limitations in utilising questionnaires that have previously been developed to explore psycho-social factors and recognise that many are obsolete and require revisions in order to reflect current clinical practice.

Further to this Malpass, Andrews and Turner (2009) also note differences between various recommendations as they argue that individuals perceive diet and exercise recommendations differently to medications. They conducted thirty in-depth interviews to explore patients' with newly diagnosed type two diabetes experiences of making lifestyle changes as per dietary and physical recommendations. In doing this their aim was to understand whether making various lifestyle changes at once, as oppose to making a singular change is beneficial or whether it becomes a barrier to adhering to change. Interviews were conducted in the UK and repeated after six and nine months. A thematic analysis of the data suggested that making simultaneous changes were helpful in adhering to self-management. Some patients recognised exercise as a means to adhere to self-management and were aware that it could reduce blood glucose levels.

Although patients saw these recommendations as playing an important role in maintain their diabetes over time, it must be taken into consideration that newly diagnosed individuals may be more motivated than individuals that have progressed over time. Although interviews were conducted over a year, it may have been more beneficial to observe changes over a longer period of time. However, undertaking interviews at an early stage of this condition provides opportunities to explore health beliefs towards adhering to recommendations at an early stage. Furthermore, they provide an opportunity to gain insight as to whether patients have a good understanding of the recommendations suggested in terms of the lifestyle changes required for self-management.

Issues around the alignment of patient and healthcare professionals' perceptions have been previously highlighted in the literature (Harvey and Lawson 2009). An observational study undertaken by Franch-Nandal et al. (2015) recruited a total of nine hundred and seventy-four consultants and one thousand and twelve patients from various areas of Spain. They found perceptions of healthcare professionals and their patients did not match when asked their views on diabetes management and treatment. Several other studies have noted similar discrepancies between patients' and healthcare professionals' perceptions of adherence (Yoshioka et al. 2014), meaning better communication is needed to explore potential issues which are essential in equipping individuals with problem-solving abilities.

2.4 The Development of Patient-Centered Care

More recently healthcare professionals have been encouraged to develop a patient centred approach by involving individuals in health-related decisions (NICE 2015). NICE guidelines (2015) highlight the need to take personal preferences and choice into account when prescribing healthcare recommendations. However, this requires them to develop an understanding of their condition and perceived level of confidence in their self-care abilities.

Education plays an essential role in diabetes management by assisting individuals to become experts in their care (Lee et al. 2016). However, it has been argued that the timing of information, as well as the type of information provided by healthcare professionals, plays a crucial role in how individuals shape their future diabetes management (Cvengros et al. 2009). However, some individuals may wish to have passive involvement of their care (Reach 2011), and may, therefore, find making health-related decisions more challenging. A study by Lawton et al. (2008) found patients felt that healthcare professionals involved with their care were responsible for making health-related decisions on their behalf. Alternative explanations suggest

that some are likely to modify their behaviour by reaching an emotional crossroad where new insight leads to the condition being perceived differently (Jutterström et al. 2011).

Jutterström et al. (2011) suggests empowerment and believing in one's abilities may be significant in overcoming issues regarding adherence. They further argue the importance of receiving patient centred care in facilitating openness and building rapport. However, what defines patient centred care and how healthcare professionals assess whether this is effectively being provided remains problematic (Asimakopoulou and Scambler 2013). This raises questions such as whether an individual is assumed to feel empowered through self-management and whether healthcare professionals should assume all individuals wish to play an active role in their care (Hinder and Greenhalgh 2012). Research suggests the success of patient centred care depends upon an individual's own motivation which in turn plays a prominent role in self-management behaviours (Williams et al. 2016).

2.5 Psycho-social Theories and Adherence in Type Two Diabetes

Psycho-social factors have also been found to play a fundamental role in understanding challenges that prevent good glycemic control and satisfactory diabetes management (Pretorius and Steel 2015). Rosenstock, Strecher and Becker (1988) argue theories of self-efficacy (Bandura 1977), Locus of Control (Rotter 1966) and the Health Belief Model (Maiman and Becker 1974) are effective in predicting and explaining behaviours. The Necessity-Concerns Framework (Horne and Weinman 1999) and Perception of Illness theory (Wiebe and Christensen 1997) have also been identified as predictors of adherence.

Locus of Control (Wallston, Wallston and DeVillis 1978) proposes that an individual's perception of who is responsible for their health or illness is significant in predicting health behaviours and the way a condition is managed (Rotter 1954, Rotter 1966). The belief that health outcomes are the result of an individual's behaviour (internal locus of control), or that outcomes are under the control of others (external locus of control) has been shown to influence self-management significantly. Overall, the degree to which the belief that health is controlled by internal or external factors depends upon past experiences, expectations and current illness perceptions (Nugent et al. 2015).

A qualitative study by Nugent et al. (2015) examined perceptions of control in thirteen individuals with type two diabetes in relation to self-management. Data collected by undertaking semi-structured interviews found that locus of control and self-efficacy were influenced by complexities involved with their condition. Comorbidities also impacted on individuals' self-management behaviours. The small sample size recruited to this study may

mean the results of this study are not generalisable. Furthermore, as all individuals were currently using insulin therapy, findings may also be relevant to individuals who have been prescribed similar medical regimes. However, this is supported by other previous literature which has suggested there is a strong relationship between internal locus of control and adherence behaviours (Fontanella 2014).

A cross-sectional study by Gonzalez et al. (2015) recruited one hundred and forty-two American individuals with type two diabetes to assess individuals' perceived control of their condition. They aimed to evaluate whether cognitive behavioural therapy facilitated adherence to healthcare recommendations. Semi-structured interviews and validated questionnaires were undertaken to assess perceptions of control, self-efficacy and emotional distress for self-management and medication adherence. Results suggested that individuals' perceptions of control played a key role in adherence to healthcare recommendations, particularly in respect to medical regimens. Individuals perceptions of control were associated with emotional distress which was consequentially associated with adherence. Self-efficacy was also associated with adherence. Although data was collected from subjective self-reports, the authors argue that gaining a better understanding of an individual's perceived confidence in undertaking self-management activities is key to understanding potential barriers that drive non-adherence. They further argue the need to examine individuals' perceptions over a longer period of time in order to gain this insight.

However, a meta-analysis of seventeen studies undertaken by Hummer, Vannatta and Tompson (2011) did not find a significant relationship between locus of control and diabetes management as statistics showed that internal locus of control and HbA1c levels were uncorrelated. The study also highlighted limitations of undertaking a meta-analysis, as many studies used varying scales to measure locus of control, meaning discrepancies between results may affect findings from this review. Furthermore, the small samples recruited in many of the studies analysed could potentially mean that results could change with a more representative number of participants.

A study by Besen et al. (2016) also examined whether locus of control was predictive of self-management activities and HbA1c levels. One hundred and twenty-nine patients with type two diabetes living in Turkey were recruited to complete validated questionnaires including the Locus of Control Scale (Rotter 1966). Results suggested a weak negative significance between self-management activities and locus of control. Furthermore, a weak negative significant result was found for locus of control and HbA1c values. These findings suggest that individuals with

internal locus of control are more likely to engage in self-management activities. However, explanations for these inferences are unable to be provided. However, they suggest that developing an internal locus of control may increase individuals' adherence to healthcare recommendations as they are more likely to engage in positive health related behaviours, such as self-management activities. The inconsistency of these results found in the above studies suggest consideration should be given as to whether the Locus of Control Scale (Rotter 1966) is a reliable predictor of self-management or HbA1c levels.

Handley, Pullon and Gifford (2010) aimed to understand patients' experiences of managing type two diabetes since their initial diagnosis using qualitative methods. Nine semi-structured interviews from patients in New Zealand were analysed from a phenomenological and grounded theory perspective. Results suggested that when participants felt in control of their condition, it enabled them to manage their condition more effectively. Furthermore, all three themes that emerged from the analysis related to aspects of control. Participants reported they found making lifestyle changes in order to regain control of their condition challenging, noting that barriers make efforts increasingly difficult. Motivation also played a key role in initiating lifestyle changes. Feeling empowered and coming to terms with the condition was facilitated by individuals' belief systems. The authors argue the importance of recognising that individuals need to feel in control throughout different stages of their life, as the condition progresses. They also highlight the importance of providing individualised support that encompasses self-management which is necessary to assist individuals to find acceptance. The sample recruited in this research excluded individuals who did not have any other prevalent comorbidities. However, this may be particularly important as coinciding comorbidities may affect an individual's overall sense of control in relation to their health. Utilising qualitative methodologies will enable researchers to gain a better understanding of individuals' perceptions and potential barriers involved in preventing individuals from undertaking self-management activities.

The importance of understanding perceptions of illness has been highlighted in The Health Belief Model (Maiman and Becker 1974). This theorises that perceptions can determine health outcomes such as the way in which healthcare services are utilised and the how individuals adhere to recommended treatments. It has been suggested that patients are more likely to practice treatment behaviours if they consider a condition to be a threat (Gosse 2007). Gosse (2007) recruited fifty-five type two diabetic women from in America who agreed to complete a cross sectional Illness perception questionnaire- revised (Leventhal et al. 2003) which was used to measure their illness representations. Results from this exploratory study suggested there was a significant relationship between self-management and emotional distress. Further to this,

women with a higher sense of control were more likely to have better HbA1c levels. Those who felt more in control of their diabetes also felt they had an awareness of the consequences from not adhering to the condition. However, women with several other comorbidities were more likely to have an external locus of control. These findings suggest that emotional distress may be predictive of how adherent an individual will be to self-management activities. In view of this, it is important that individuals have a good understanding of the potential consequences of uncontrolled diabetes which may encourage adherence to healthcare recommendations. It could be argued that as most participants had other comorbidities, it cannot be assumed that individuals view these conditions as separate entities or are able to separate their emotional distress in regards to each condition. Although self-reported scales may be too reductionist to understand the processes involved in the development of beliefs and illness representations, the study does highlight the complexities involved in chronic health conditions. The authors suggest healthcare professionals should use validated scales as part of their assessment process in gaining a better insight into individuals' perceptions of their health.

Illness perceptions may change over time, particularly as the condition progresses or as an individual develops other chronic comorbidities that affect an individual's daily living. In view of this illness perceptions should be regularly reviewed to ensure belief systems are accurately informed which will help overcome potential barriers. Illness threats are related to an individual's perception of a condition's symptomatic presentation and are also influenced by belief systems (Meyer, Leventhal, and Gutmann 1985).

Consequently, how a condition is viewed plays a bigger role than its severity. Ockleford et al. (2008) explored the perceptions of thirty-six type two diabetics in the UK through semi-structured interviews after they had been part of a randomised controlled trial education intervention. Nineteen individuals had been previously randomised to an intervention where they underwent a structured education programme to improve self-management to healthcare recommendations, while standard care was provided to seventeen individuals by a general practitioner. Results suggest the diagnosis of a chronic condition affected an individual's identity as individuals reacted to the news differently. Some perceived their diabetes as something that they could accept and changed their behaviours accordingly, while others accepted the diagnosis but perceived other aspects of their life more important than the self-management behaviours required for diabetes. Some individuals reported challenges in accepting their diabetes but made changes to their lifestyles, while others were unable to accept their diagnosis and consequentially did not modify their life as a result. Perceptions of personal responsibility was a significant factor in the way in which individuals responded to their

diagnosis. Findings suggest that those who had been randomised to receive education were more likely to accept a diagnosis of diabetes as part of their identity which had implications for the way in which self-management behaviours were adopted. Mixed experiences were reported in those who had experienced the education, highlighting the importance of recognising and taking individuals preference into consideration in relation to self-management.

Belief systems involved in perceptions of illness stem from an understanding of whether the condition can be cured or controlled, its causation, how long it is likely to last and the impact it will have on their life. This suggests that information exposure during the initial stages of their condition can shape the way in which patients make future decisions about their health (Goering and Matthias 2010). Understanding the development of belief systems is important due to the significant effects they have on self-management behaviours throughout an individual's lifespan. As the condition progresses, changes in medical regimens or healthcare recommendations may be made to ensure blood glucose control is optimal.

Consequentially, an individual's perception of their treatment may change through this experience, alongside their levels of motivation which could contribute to non-adherence (Schwartz et al. 2017). Schwartz et al. (2016) found patients' experiences and perceived challenges of diabetes management contributed to non-adherence. They suggest exploring individuals' motivation by taking time to understand their experiences and what meanings are given to the recommendations suggested. Having this insight will enable healthcare professionals to gain a better understanding of any concerns during medical consultations and provide support to overcome any potential barriers (Newton, Asimakopoulou and Scambler 2015). Effective communication skills have a strong association with increased adherence to healthcare recommendations. Individuals should feel empowered to make treatment related decisions through negotiation to build therapeutic relationships with their healthcare professionals (Brundisini et al. 2015).

Individuals also develop representations of their illness through experience. Adequate patient support would help to ensure treatment recommendations align with perceptions of illness, thus increasing the likelihood of adherence. Horne and Weinman's Necessity- Concerns Framework (1999) argues the importance of acknowledging the relationship between treatment concerns and perceived necessity. Horne and Weinman's Framework (1999) proposes that treatment adherence is influenced by the health-related decisions that are made, based on weighing up these factors. If an individual believes their prescribed healthcare recommendations are necessary and outweigh their concerns, the more likely treatment adherence will occur.

Concerns may include treatment expectations and perceptions around the progression of the condition as well as practical issues such as experiencing hypoglycaemic episodes.

Self-efficacy is the belief that one feels able to achieve a goal (Bandura 1982). This is an important predictor of adherence because behaviours may be influenced by beliefs, rather than what a healthcare professional would describe as medically objective (McElfish et al. 2016). Self-efficacy has been associated with individuals who have a good understanding of their medications, blood glucose values and self-management requirements (Lee et al. 2016). Education has been beneficial in supporting patients to develop confidence and a better understanding of their condition, as well as in their abilities to successfully undertake self-care (Matthews, Peden and Graham 2009).

An individual's perceived confidence in their abilities plays a key role in adopting self-management behaviours (Caulfield 2012). It has been argued that equipping individuals with the relevant skills and perceived competencies to achieve treatment goals motivates behaviours (Julien, Senecal and Guay 2009), highlighting the importance of ensuring adherence is a collaborative process (Tamhane et al. 2015). In light of this, it is important to consider how recommendations are perceived, as well as the way in which belief systems are developed to understand the barriers associated with adherence (Jackson et al. 2015). An individual's understanding of their condition has consequences for the way in which they make health-related decisions (Ingadottir and Hallodorsdottir 2008), which implies that a healthcare professional's communication skills are pivotal to the way in which the condition will be managed (Langst et al. 2015).

The current body of literature in this review suggests there are a number of limitations involved in the current pscyho-social models and scales used to assess adherence, meaning further research is needed to gain a better understanding of the role of adherence and the factors that play an influential role in health-related decision making. Due to the complexity of diabetes, current scales are unable to capture this information. Many scales are reported from a healthcare professional's opinion of a patient's ability to engage in their suggested recommendations rather than taking a patient's own perspective into account. Furthermore, psycho-social scales are unable to be tailored to an individual's own diabetes management regimen or take the complexity of various recommendations into account.

Although psych-social questionnaires have been developed to assess individuals' views of decision making, individuals own understandings of what adherence means to them and what they consider to be important aspects of adherence is not taken into consideration. Moreover,

validated scales make assumptions that patients have a good understanding of the healthcare recommendations made to them and that they wish to take a pro-active role in their care.

A further limitation to note is that these models do not consider the actions of the healthcare professional, nor do they view the medical consultation as an event that is co-constructed between the patient and healthcare professional. The current literature provides a limited, if not reductionist view of how meanings of adherence are constructed and negotiated within medical consultations. Furthermore, because psycho-social measurements do not take the medical consultation into consideration there is little understanding as to how interactions between the healthcare professional and the patient inform the negotiation process regarding adherence and how communication processes lead to adherence to healthcare recommendations.

Although psycho-social scales may be used for predictive values, a more in-depth understanding is needed to understand how healthcare recommendations are communicated and understood and how the process of shared-decision making is undertaken is negotiated in medical consultations. There is still a need to investigate adherence from an in-depth perspective in order to understand how this is linguistically enacted within consultations by healthcare professionals and patients. By gaining better understanding of these processes, more effective interventions can be developed to provide better support and assist individuals with self-management.

The limitations highlighted put forth an argument for the need for further research to utilise methodological approaches that allow these issues to be explored in greater detail to gain a better understanding of the processes involved in the notion of adherence. In doing this, an approach that is able to focus its lens on the medical consultation and view the interactions of both healthcare professional and patient as a joint event should be considered. A methodological approach that examines the ways in which adherence is negotiated within the medical consultation should be considered.

2.6 Education and Health-Related Decision Making

Health education may assist behaviour change by modifying individuals' belief systems and consequentially improving rates of adherence (French, Wade and Farmer 2013). However, there is still a need to understand how illness perceptions develop and change over time to ensure interventions remain effective and provide support (Keogh et al. 2007). Determining how healthcare professionals communicate recommendations, and the way in which this information is perceived may be key to uncovering issues behind non-adherence.

Diabetes management can involve complex adaptions to various aspects of lifestyle. To accept these changes individuals not only have to understand what is being asked of them, but also why

it is important (Lippa, Klein and Shalin 2008). It has been previously suggested that feeling competent and having a perceived sense of autonomy is critical and can increase the likelihood that the advice recommended by healthcare professionals is accepted (Jacobs et al. 2014). However, research by Dhippayom and Krass (2015) suggest this is not the case. Data collected from validated questionnaires found that individuals who were associated with non-adherence were also those who had more knowledge about their condition. Although the use of subjective measurements and the potential for sample bias have been acknowledged, findings from research such as that by Scoenthaler et al. (2012) have made similar conclusions. Recommendations from these findings suggest that healthcare professionals should focus on behaviour change strategies alongside knowledge provision to provide effective support.

Schwartz et al. (2017) suggest that non-adherence is a multi-dimensional issue and that changes with patients, healthcare professionals as well as the healthcare system need to occur simultaneously to make a successful impact. Issues contributing to non-adherence on various levels make it difficult to gain insight into understanding challenges, particularly at an individual level. Having a better understanding of patients' experiences of adherence to healthcare recommendations will enable healthcare professionals to provide better support during medical consultations. Malpass, Andrews and Turner (2009) suggest a more effective strategy would be for patients to feel competent in a single lifestyle modification before making alterations to another.

NICE guidelines (2015) suggest that a form of structured patient education should be available to assist in the development of self-management skills, which should also take cultural and literacy needs into consideration. The intention is to shift responsibility from the medical professional to the 'expert patient' which has been noted as facilitating patient engagement (Hoffman and Del Mar 2012). By taking ownership of the condition, it is assumed that an individual accepts responsibility for their health outcomes. It is also hoped that individuals feel empowered by having more involvement in their care. However, Cornell et al. (2011) note how current models of education are insufficient in engaging individuals over time. This may be due to changes in perceptions and care needs over the course of their lifespan (Gomersall, Madill and Summers 2012).

Self-management requirements are an ongoing process requiring regular reviews to ensure therapeutic interventions remain effective as the condition progresses (Choi et al. 2014). Individuals should be granted access to education throughout their lifetime to ensure appropriate knowledge is available to them should any changes occur (Cornell et al. 2011). Hoffman and

Del Mar (2012) state the importance of utilising health-related information effectively to assist in making treatment-related decisions. However, individuals with lower literacy levels may find difficulties in utilising the advice of healthcare professionals (Ishikawa et al. 2009). Consequentially, the misinterpretation of healthcare recommendations could hinder the patient's understanding of self-management and adherence.

2.7 Limitations of the Current Literature

As suggested above, psycho-social factors play an influential role in adherence, suggesting greater input from healthcare professionals are needed to overcome barriers successfully support individuals as they transition into this life changing condition (Goering and Matthias 2010). Various models and theories offer explanations for health-related decision making and non-adherence to healthcare recommendations. However, this also illustrates the complexities involved in understanding an individual's rationale behind their perceptions and behaviours. Therefore, rather than exploring adherence through the lens of a particular theory, the focus of this research will be the issue of adherence itself.

Much quantitative research has been undertaken to explore adherence, by focusing on potential barriers involved. Although more recent research has highlighted the importance of emphasising patients' perspective (Lynch et al. 2012), there is a relatively small amount of literature taking this view about the notion of adherence itself. Further research is needed to explore how individuals' understanding and perceptions of adherence are constructed. A qualitative approach will assist in gaining insight into how understandings of adherence are constructed, as well as individual's experiences of diabetes management (Malpass, Andrews and Turner 2008).

Clifford et al. (2014) note the difficulty in attempting to define adherence in diabetes management due to the multifaceted complexities involved. Although different methodologies of assessing adherence have been explored, there are no universally standardised guidelines for individual recommendations. Despite a plethora of research on the subject of adherence in relation to the development of interventions and education programmes, non-adherence remains an issue. Furthermore, the literature suggests it is assumed that patients have a competent understanding of diabetes management and notions of adherence, as well as the behaviours they must adopt to achieve therapeutic goals.

Several studies have used self-reported scales that have been developed as a means of assessing adherence in type two diabetes. More recently, literature has focused on understanding the perceptions of healthcare professionals, as well as patients to gain insight into how information is understood after it has been communicated (Liguori, Murase and Hamamura 2016). From this

point of view, it is important to consider both how individuals learn to manage their diabetes (Kneck, Klang and Fagerberg 2012), and how perceptions of adherence are constructed.

2.8 Conclusion and Future Directions

To date, little research has been conducted using a qualitative methodology to explore how notions of adherence are constructed. There is a need to gain a better understanding of how individuals' perceptions of adherence influence health-related decisions. Few studies have focused exclusively on the notion of adherence by looking at patient and healthcare professional perspectives by employing a qualitative approach. This is a gap this research aims to address.

2.9 Overview: Research Aims

Type two diabetes is a chronic progressive condition that requires effective self-management to ensure individuals' quality of life remains in tact. To prevent further complications, it is important that good glycemic control is exercised which is dependent on an individual's self-management abilities. Self-management behaviours are communicated through healthcare professionals' recommendations to lifestyle, diet, exercise or prescribe medications.

Effective self-management is associated with adherence to the recommendations made by healthcare professionals. It is also associated with shared decision making and effective communication which takes place during medical consultations. Psycho-social factors and potential barriers play a key role in predicting adherent behaviours. Although previous literature have investigated adherence and the role of self-management from a pyscho-social perspective, few have explored the ways in which adherence is communicated when recommendations are made during medical consultations. Furthermore, the literature highlights the use of behaviour change models as a way of supporting individuals to develop self-management skills, however there is still a need to understand the ways in which healthcare professionals and patients negotiate notions of adherence.

Communication has also been highlighted as one of the most influential ways in which an individual's behaviour can be modified. It is therefore crucial that linguistic mechanisms are explored, to gain a better understanding of how adherence is communicated throughout the medical consultation. A deficiency that has been emphasised throughout the literature is the lack of detail that studies include when successful behaviour change taxonomies are described. To date, little research has been conducted using qualitative methodologies to explore how notions of adherence are co-constructed. A more in-depth exploration of how adherence is

communicated within medical consultations using sociolinguistic methodologies would assist in the development of more effective interventions that aim to improve self-management outcomes.

A study by Schöpf, Martin and Keating (2017) explored the ways in which communication strategies are used to accomplish goals within medical consultations, they investigated how and why humour is used within consultations and its impact on interaction. Interactional sociolinguistics were employed to analyse interview data which were collected from tape assisted recall. Findings suggested that humour was used as a way of expressing emotional concerns which was employed as an emotional coping strategy. The transferability of these findings may be limited as data was only captured in one hospital, however despite this findings from this study highlight the importance of exploring linguistics and communicative strategies that are employed within medical consultations. The authors suggest more awareness of these strategies are needed and recommend that further research should be undertaken using methods that enable researchers to capture detailed information about the linguistic strategies involved in communication.

Communicative strategies were also noted by Sarangi et al. (2004) who found that genetic counsellors used speech acts within consultations in order to be non-directive and ensure advice could be given without providing guidance. Discourse analysis enabled the authors to gain insight into the types of questions asked in consultations to gain an understanding of the typical structure of these clinic sessions. Questions were acknowledged as being particularly important as patients were referred to discuss and obtain information about their health. The use and function of questions utilised throughout the consultation were crucial due to the potential impact they could have on a patient's decision.

The existing literature suggests that communication strategies within interactions perform different functions to achieve various goals. However, little is known about how these strategies are used in interactions with type two diabetes patients, particularly in relation to how adherence to recommendations are linguistically negotiated. Shared decision-making processes have been identified as having involvement in adherence to healthcare recommendations, however this has not been explored through methodologies that allow linguistics to be the focus of investigation. To address this, this research aims to explore the ways adherence is negotiated by examining the use and function of questions that emerge throughout the medical consultations. This will include analysing how adherence is co-constructed in medical consultations with patients who have type two diabetes and the impact it has on these interactions. Basing the analysis on recordings of naturally occurring communication will enable the researcher to capture these linguistic exchanges as they emerge. In addition, drawing on both patients and consultant's own

interpretation of the consultation not only provides triangulation but will also enable the researcher to understand how linguistic negotiation of adherence is communicated and how it contributes to the achievement of goals.

This study aims to add to the current body of knowledge by developing a better understanding of how adherence is linguistically negotiated between the patient and healthcare professional by exploring the use and functions of questions utilised within medical consultations, in a population of patients with type two diabetes.

In light of issues highlighted in the literature, the following research questions were developed:

a. How is adherence linguistically negotiated between the patient and consultant, specifically focusing on the role of questions in medical consultations?

b. What are the typologies of questions that emerge throughout the various phases of medical encounters of individuals living with type two diabetes?

Chapter 3: Methodology

This chapter discusses the methodology, including the justification and alignment of the researcher in consideration of the research design. To follow, an overview of the methods applied to this research will be discussed which will include ethical considerations and sampling techniques, as well as data collection, management and analysis.

3.1 Consideration of the Research Paradigm

During the initial stages of design, various research methodologies were examined and taken into account. However, the chosen research methodology is aligned with the researcher's epistemological views. A constructivist paradigm was used to address the complexities of adherence through a detailed narrative. This approach is underpinned by looking at the construction of the social world through meanings created by an individual's perception of reality. A subjectivist epistemology was considered most appropriate due to the focus on individuals' experiences and perceptions within interactions (Guba and Lincoln 1989). This takes a relativist ontological view by accepting that there are multiple subjective realities which are made up of socially interpreted constructs (Guba 1992). Aligning oneself with this perspective allows the exploration of knowledge, which is context and time dependent, to generate meanings and understandings which describe the insiders' perspective.

Exploratory, qualitative research methods allow rich, contextual data to be collected at the level of the individual. Through utilising this approach, an in-depth understanding of perceptions and experiences of treatment management will be obtained.

A theme orientated discourse analytic approach (Roberts and Sarangi 2005) guided the data analysis process with an interactional sociolinguistically informed perspective, which assumes role and identity are enacted within discourse (Goffman 1967). The use of interactional sociolinguistics (Gumperz 1986) is appropriate for analysing discourse within institutional settings where language diversity indicates boundaries of status, roles and responsibilities (Gumperz 1982).

This is particularly important in consideration of the power asymmetries between healthcare professionals and patients due to differences in epistemologies (MacLellan and Berenbaum 2006). This approach to data analysis acknowledges the complexities of human behaviour which is influenced by experience and conducted through interactions with others. It also enables the

researcher to examine the background knowledge, and linguistics participants use to achieve their goal, as well as how roles and identities are negotiated (Sarangi 2007). Taking a theme orientated approach allowed for the examination of emerging patterns and discrepancies between the interactions.

3.2 Research Methods

It was vital that the methods for data collection would provide rich, contextual data to assist in the exploration of how perceptions of adherence are constructed within medical consultations. In consideration of this, audio recordings of patient consultations and semi-structured interviews were employed as methods of data collection. Data was collected over five months, from October 2016 to February 2017.

3.3 Sampling Process

Purposive sampling methods were employed to select patients with a diagnosis of type two diabetes, who were attending an outpatient clinic for the first time. Purposively recruiting individuals with type two diabetes ensured they could provide accounts of their experiences in regards to healthcare recommendations. Patients attending the hospital had been referred to specialist services due to the difficulties in controlling blood glucose levels. This allowed the researcher to observe encounters with patients who were experiencing a change in healthcare providers. Recruiting individuals at their initial visit enabled the researcher to gain insight into their previous experiences of treatment management under the care of other healthcare professionals. Audio recording patients' medical consultations enabled the researcher to obtain contextual information about the care that had been provided by previous healthcare professionals as well as patients previous experiences and expectations of self-managing diabetes.

Furthermore, collecting data from medical consultations enabled the researcher to understand how language is used to negotiate treatments within medical consultations, explore consultant and patient interactions and how adherence is co-constructed between the two parties. There is a need to have a greater understanding of how recommendations are communicated and how shared decision-making takes place.

Gathering this information at a patient's initial referral appointment assisted in understanding how the dynamics of the consultation first developed through the interaction. At initial consultations, extra time is provided to allow the healthcare professional to gather information

relating to an individual's medical history before formulating a treatment plan. Examining the initial consultation also provided rich information relating to the discourse exchanged in relation to the way in which healthcare recommendations were communicated.

An eligibility criterion was followed for the screening of potential participants.

Inclusion Criteria:

1. Over the age of 18
2. A formal diagnosis of type two diabetes
3. A recent change in service provider and attending clinic for an initial consultation
4. Able to speak, read and write English

Exclusion Criteria:

1. Diagnosis of gestational diabetes or type one diabetes
2. Unable to give informed consent
3. Under the age of 18

3.4 Recruitment Strategy

Participants were recruited through diabetes and weight loss management clinics which were situated in an outpatient endocrinology department. Clinics were identified by a research nurse who had access to appropriate lists where potentially newly referred participants with type two diabetes would be found. Participation at these clinics depended on the availability of the consultant overseeing them.

A consultant was approached and provided with information (see Appendix B) before agreeing to participate in this research. Due to his interactional involvement, the consultant was also considered a participant and signed an informed consent form (see Appendix C). This explicitly gave permission for consultations and interviews to be audio recorded.

3.5 Ethical Considerations

Ethical approval was obtained from the Research Ethics Committee (REC) and Health Research Authority (HRA) (see Appendix D). In addition, local approval was obtained from the Research and Development department at Coventry University as well as University Hospitals Coventry and Warwickshire, where this research was conducted (see Appendix E).

Before any research-related activities, potentially eligible patients identified for participation were provided with information about the research (see Appendix F) which was sent via post prior to their hospital appointment. Participants were approached in clinic to ensure the patient

information sheet had been received. Additional information was provided if they had not received a postal invitation but expressed interest in taking part. All participants were briefed after confirmation that the information given had been read and understood. A detailed explanation of the research, including its purpose, related activities and the data collection process was also provided. Participants were informed about confidentiality, their right to withdraw and that the data would be used solely for research. Time was given for consideration, and the researcher answered any questions raised.

The informed consent process (see Appendix G) was undertaken by the researcher who positioned themselves as a non-healthcare professional to illustrate a separation with the clinical healthcare team. Permission to audio record the encounters was obtained from all participants through explicit informed consent. Participants were informed that audio recordings would not be shared with any member of their clinical healthcare team, but that the supervisory team would have access for validity purposes.

Due to the sensitive nature of this research, participants were informed before the interviews that they would be able to stop the audio recording at any time should they wish. After all research activities had been completed, participants were debriefed (see Appendix H) and given a shopping voucher and car parking expenses as a gesture of appreciation.

3.6 Data Collection Procedures

Data were collected through audio recordings of the patient's medical consultation. It should be noted that the researcher was not present during this time to respect patient privacy. Following this, patients were invited to undertake face to face semi-structured interviews with the researcher which were also audio-recorded for validity purposes. Demographic information was collected with consent for descriptive data purposes. A summary of participants' demographics are included in Appendix I.

Finally, the consultant was invited to attend a semi-structured interview, which enabled the researcher to understand the reasoning behind recommendations and gain insight into their perceptions. A total of seven patients and one consultant were recruited, providing each patient with three sets of interactions, Data gathered from patient consultations as well as the semi-structured interviews conducted with patients and the consultant were used as a means of triangulation (Fisher and Savin-Baden 2001), providing context to inform the overall analysis. The data also provided further insight into any significant events to note during the consultation. Due to the highlighted issues around communication, medical consultations were the central focus of the analysis in this thesis, with data from patient and consultant interviews providing

further insight into perceptions of adherence. A formal analysis and complete findings of the interviews is outside the scope of this thesis, however these will be reported elsewhere and will be submitted for peer review publication.

3.7 Data Analysis

Consultations were performed in an outpatient clinic room which lasted between 23 and 60 minutes. The nature of this approach encompasses a broad approach to discourse analysis, meaning that the data analysis process was iterative, starting at the point of data collection. A theme orientated approach enabled the researcher to connect interactional sociolinguistics to adherence, which was the focal theme of this research. This approach enables the content and the structure of the interaction to be analysed, providing a further dimension to the analysis. It also allowed the researcher to analyse linguistic patterns that emerged from the consultation data while analysing participants' speech to gain an understanding of how meanings are constructed within medical encounters (Roberts and Sarangi 2005).

Once all data sets had been audio recorded, they were listened to for familiarity. The audio recordings were transcribed verbatim using Microsoft Word and Express Scribe software with consideration to interactional sociolinguistics transcription conventions (Jefferson 1979, Gumperz and Berenz 1993). This included detailed features such as intonation, pitch, speed, pauses or rephrasing of speech, to provide a sufficiently detailed picture of the events within the discourse (see Appendix M). Pseudonyms were used to ensure participants identities were confidential. Memos were used to note non-verbal communication, including any significant events that happened during the consultation. Prior to coding, a micro-analysis of the transcripts enabled the researcher to gain an in-depth exploration of the encounters (Gumperz 1999). Different phases of the medical consultations were identified throughout each transcript which led to further examination of the interaction.

The goal of a consultation is to come to an agreement as to how the patient will move forward in managing their health through the consultation (Schöpf, Martin and Keating 2017). The focus of the analysis was to identify discourse relating to adherence, including recommendations made throughout the consultation. Recommendations are made to the patient by the consultant as medical expertise lies within his domain. Questions asked by the consultant are designed to seek and clarify information regarding medical history, current health and any relevant medications that are being taken to manage their conditions. It is particularly important to observe how recommendations are initially communicated by the consultant to understand how shared decisions are negotiated.

Particular attention was paid to the role of questions, floor management, phase structure and the negotiation of roles and responsibilities of participants as well as the alignment of patient and consultant (Roberts and Sarangi 2005). These were noted in Microsoft Word (see Appendix L). Consultation transcripts were transferred to NVivo 11 data management software for coding. By constantly re-reading the transcripts, categories and subcategories emerged where patterns in the discourse were found which led to a comparative analysis of the consultation phases between datasets. These were reviewed by a member of the supervisory team to ensure concordance.

Definition of Terms

The following terms are defined according to its use in this thesis.

Contextualisation Cue ~ A verbal sign or utterance that provides contextual; information about what is being said and how language is being used. These cues influence or guide the listener to interpret the information, affecting the way in which the information that is being communicated is understood.

Declarative information request ~ A request to confirm information.

Declarative Informative Reformulated into an Interrogative Information Request~ A request for information after making an assertion/ statement.

Declarative informative ~ Information that used to make a statement or instruct.

Declarative Syntax with rising intonation ~ A way of clarifying a person's understanding by using a confirmation request to do so.

Footing ~ A way to signal change in an interaction or change in the framing of communication through either verbal or visual cues.

Floor space ~ A way to allow an individual to take turns or contribute to a topic in conversation.
Frame ~ A way in which a speaker communicates with cues that provide assistance to the individual receiving the message that helps interpret the interaction within the context of the situation.

Inferencing ~ How an individual interprets information they are presented within a situation or how they make sense of what is being communicated which is deduced from previous experience, perceptions and expectations.

Interrogative information request ~ A direct request inviting confirmation as to whether an individual has access to knowledge.

Interrogative information request reformulated as a queclarative ~ An assertion that is presented as an information request.

Known answer question ~ Used as a way of illustrating a person has knowledge of terminology but is simultaneously used to check one's own comprehension.

Misalignment ~ This occurs when information is misinterpreted, miscommunicated or when both parties do not correspond to each other resulting in uncomfortable or inappropriate linguistic responses.

Negative interrogative reformulated into an interrogative information request ~ An assertion reformulated as an information request.

Queclarative reformulated as an interrogative information request ~ An assertion that is presented as an information request.

Reformulation ~ To change or revise the way in which the speaker has communicated.

Rhetorical question ~ A statement made to emphasise a point or persuade the listener.

Tag question ~ A request for agreement or confirmation.

Utterance ~ A unit of speech, spoken word or vocal communication that provides signals to the speaker. This can reassure an individual that they have understood a situation or can guide an individual in a different direction.

The above descriptions can be found within the analyses undertaken in this thesis, that lie within the discipline of interactional sociolinguistics.

3.8 Data Verification and Trustworthiness

Reviewing the trustworthiness of qualitative research must be reflective of, and relevant to the different epistemological views of the world (Ryan, Coughlan and Cronin 2007). Discourse analysis takes the perspective that there are multiple realities in the world, with individuals constructing their worlds through interactions and experiences**.** Taking this approach, the researcher can make observations and bring into question how perceptions of adherence are constructed which are usually taken for granted. However, it is important to ensure that the data can be scrutinised for rigour (Caelli, Ray and Mill 2003). Due to the subjectivity involved in qualitative research, it is important that the researcher's positionality is made explicit as this will influence the interpretation of the data (Mays and Pope 2000). Sarangi and Candlin (2003) argue the importance of acknowledging the researcher themselves as part of the analysis. It is noted that transferability may be problematic in taking a constructionist view of the world (Ballinger 2004).

Although a similar typology of questions were found across all datasets, the current sample size means that it is not possible to confidently state that findings would remain the same if a larger sample size had been analysed. In consideration of this, the results from this research are not transferable. However, they do provide insight and offer explanations for the ways in which notions of adherence are constructed within medical encounters and thus may be extended to other hospital settings (Sandelowski 1995). Several strategies were employed to ensure trustworthiness (Lincoln and Guba 1985), as illustrated in Appendix N.

3.9 Researcher Reflexivity

Reflexivity must be taken into consideration due to the nature of the approach and methodology of this research. It must be acknowledged that the researcher's theoretical perspective and experience shaped not only the way in which the research was approached but also how the data was analysed. It is understood that the process of data analysis commences upon the start of the data collection. It was crucial that the researcher engaged in self-reflection to be able to understand different views and perceptions from the data, but also to understand how certain conclusions within the data had been made.

Having over ten years' experience of working with individuals with chronic health conditions within various healthcare settings, the researcher has gained experience and familiarity of the current national health system which was essential in order to understand individual's

sentiment's regarding their treatment. It also meant that the researcher has had exposure to medical terminology used by healthcare professionals which facilitated an understanding of the medical consultations.

An advantage of using this research design is that it provides an opportunity for the researcher to collect an account of the medical consultation between patient and healthcare professional. Both patients and consultant interact and communicate without the researcher playing a role. The data collected both during the consultation, but also through triangulation of the interview data did not suggest patients or the consultant had concerns about what was said during the meeting. Therefore, the information exchanged within the consultation was considered trustworthy. When sensitive information arose, although patients were informed at the beginning of the research that they could stop audio recording at any time, all patients continued with the consultation and provided the consultant with the information as requested.

Due to the large volume of data, it was crucial that there was a process in which the data could be analysed systematically. Initially, after each consultation had taken place, each audio recording was listened to repeatedly and then transcribed verbatim which helped with familiarity. The researcher's initial thoughts and feelings were noted through the use of memos to ensure there was an awareness of any preconceptions that could shape the analysis. This was particularly important as the two additional data sets from the semi-structured interviews with the patient and consultant were also listened to and analysed via the same process. The additional data sets provided the consultation data with context and brought different perspectives to the interactions as patients and consultants own perceptions of the consultation were brought to light.

Memo writing, journaling and frequent discussions with a member of the supervisory team enabled the researcher to have an awareness of their own perspective. Throughout the data collection and analysis reflexive journaling assisted the researcher to have an awareness of any preconceived beliefs or significant thoughts. Involving other members of the supervisory team to review the interpretation of the data ensured that the themes emerging from the data could be confirmed and the trustworthiness of the data was upheld. Furthermore, a member of the supervisory team specialised in sociolinguistics, whilst other members were qualitative experts in their respective fields which strengthened the data analysis process (Henare et al. 2003).

Chapter 4: Results

The focus of the analysis was to identify discourse relating to adherence, which included information relating to previous recommendations, as well as those made throughout the consultation.

Medical consultations are goal orientated, with the aim to reach an agreement as to how patients can move forward in managing their condition (Schöpf, Martin and Keating 2017)**.** The way in which healthcare recommendations are perceived play a significant role in the ways in which expertise is understood. As the consultant draws upon his medical expertise to make meanings, patients make references to their life experiences. This leads to misalignments between the two participants and has implications for the way in which perceptions of adherence are constructed. Throughout the consultation, adherence is negotiated which facilitates shared decision-making processes. Patients' perceptions of adherence were constructed through questions asked within the encounter, which lead to shared decision-making processes (Heritage 2002). However, for a consultation to achieve patient-centric status, both participants must reach an agreement.

4.1 The Role of Questions by Healthcare Professionals

Questions posed within medical consultations play multifunctional roles but primarily assist in the acquirement of relevant information relating to patients' current health status. The way in which questions are asked also provides an opportunity for notions of adherence to be defined.

Consequentially, the information received during the consultation informs their diabetes management. Throughout the consultation, questions are used to facilitate, control and change topics of conversation. The form and functions of questions play an influential part in shaping patients' responses which are guided by the consultant.

Structural levels of the medical consultation focused on the organisation of talk by examining phases of the encounter. A structural analysis revealed that specific typologies of questions are employed throughout the consultation, depending on the goal it was trying to achieve. Questions were mapped onto various phases of the consultation as presented this analysis (Appendix O).

4.2 Phases of the Medical Consultation

All medical consultations were organised into three distinct phases: a medical history phase, a verbal or physical examination phase and a treatment phase. The first two phases were intended to gather information relating to the patient's current presentation. This was followed by an

information giving phase where the consultant made recommendations based on the evidence provided. At times, patient consultations moved back and forth between the medical history and examination phase which was attributable to the consultant's line of questioning. The scrutiny of questions assisted in understanding how adherence was negotiated throughout the consultation. In light of this, a structural examination will focus on each phase in turn.

Quotations presented in this analysis have been selected to illustrate the points made and are representative of the recurrent sequential structures and themes throughout the datasets. Figure 4.1 presents a typology of all questions employed by the consultant, while Figure 4.2 presents all questions employed by patients in various phases of the consultation.

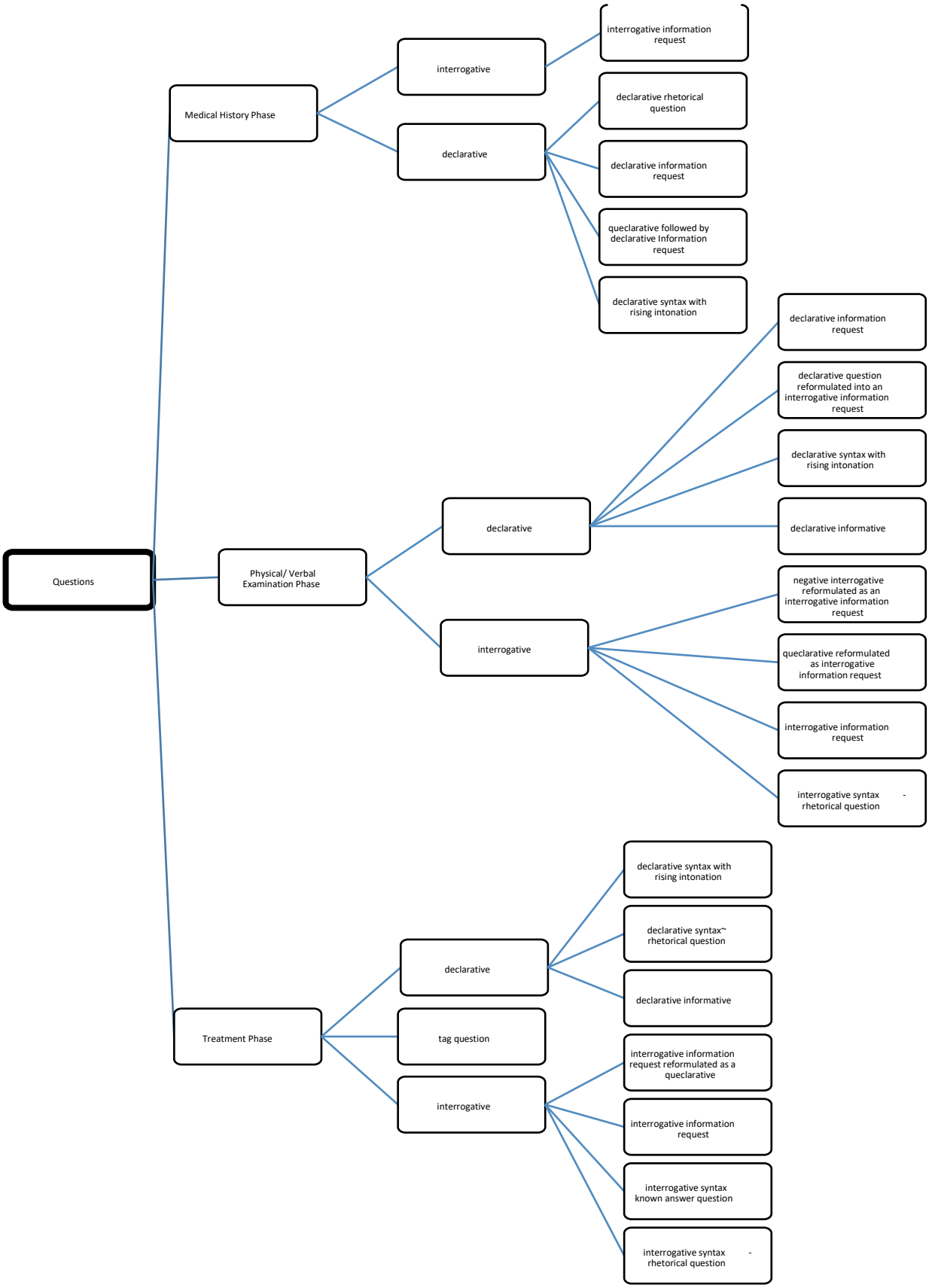

Figure 4.1 Typology of Consultant Questions

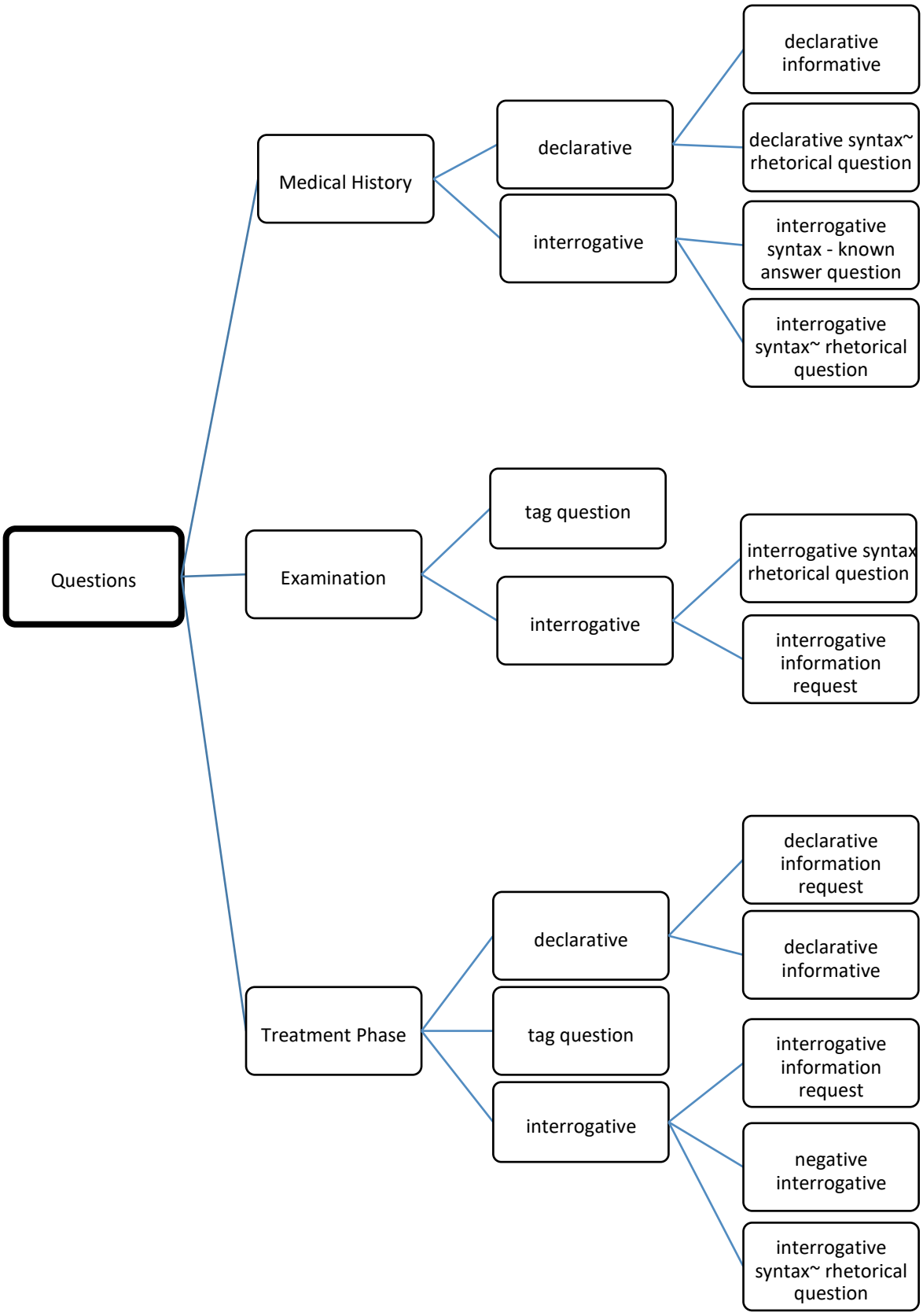

Figure 4.2: Typology of Patient Questions

4.3 Opening Sequence

The consultant initiates the opening sequence of the consultation by formally asking patients to confirm their understandings for the referral. Interactions were opened using interrogative or declarative information requests, both of which required patients to confirm their current knowledge status. All patients were aware that they had been referred due to uncontrolled blood sugar levels. However, explanations for patients' current health status varied from lack of support, issues with weight and challenges from other health conditions.

Interrogative information requests also functioned as a way of implicitly checking alignment with patient's expectations. Declarative information requests explicitly informed patients that the consultant had been granted access to their medical history records, while simultaneously asking to confirm the accuracy of the acquired information. In communicating this, the consultant deferred responsibility by referring to the general practitioner as the primary source of information. Confirmation requests are restrictive by guiding patients' responses, which typically led to sequence closure. By responding, patients effectively confirm having an awareness of current health issues. In three consultations patients deviated from the preferred style of response by drawing upon their own perceptions of the problem as illustrated in the following example.

[C: Consultant; P: Participant 001, Peter]

1	C:	so erm I was going through your gps referral letter (.)
2		a:nd er your gp reports that erm you've been err struggling with your weight,
3		and your diabetes control despite trying with [er diabeti-]
4	P:	[yes yes]
5	C:	[okay] so-
6	P:	can I just say that=
7	C:	yes?
8	P:	it's easier to stop smoking than what it is to stop eating.
9	C:	right so I've guessed that you've stopped smoking then?
10	P:	five years ago I stopped.
11	C:	okay that's very good excellent.

In this excerpt, the consultant raises the issue of the patient's uncontrolled blood sugars by stating that he understands that this is due to issues surrounding the patient's weight. The patient interrupts the consultant and responds defensively. The consultant provides floor space and

grants him permission to continue despite the deviation. The patient emphasises the difficulties he is experiencing in controlling his weight and states he feels this is more challenging than stopping smoking. By stating this, the patient requests the consultant's acknowledgement by emphasising his experiences in adhering to challenging healthcare recommendations. The consultant acknowledges the patient's health behaviour with positive reinforcement.

Interrogative and declarative questions are used to inform the consultant of patients' understandings and perceived issues regarding adherence. Patients are presented with opportunities to re-align referral information with their perceptions which they achieve through narrating their experiences.

4.4 Medical History Phase

While three consultations continue to discuss reasons for referral, the remaining four proceed to the medical history phase. Information relating to patients' current prescribed medications, risk factors, family history and the management of other conditions are elicited via interrogative and declarative requests.

Question and answer sequences dominate this phase as a way of gathering information relating to patient's past and present diabetes management. Patients play a pivotal role in this interaction with primary access to this information. At times, the consultant makes assertions based on patients' referral letters but uses declarative information requests to confirm the information. The consultant relies upon acquiring information about patients' medical history to formulate a treatment plan. However, interrogative and declarative questions restrict patients' responses by guiding them to provide yes or no, either- or answers. Once confirmation is provided, further interrogative information requests are used to elicit more specific details to assist the consultant's formulations. Patients' responses typically lead to sequence closure, before a change in footing moves the conversation along. Other times declarative information requests initiate sequence closure as the consultant checks his own understanding.

[C: Consultant; P: Participant 001, Peter]

374	C:	okay and have you ever had any issues with your eyes (.) do
375		you have er annual retinal screening?
376	P:	yes yeah.
377	C:	okay.
378		and have you had any issues with your eyes with your retina,
379		from the- the day- did they report any problems with the

		retina?
380	P:	no none at all(.)
381		July that's always done.
382	C:	so the last time you had it was July this year?
383	P:	yes yeah.

The above excerpt illustrates a repeated pattern of questioning used to elicit various information, including time of prognosis, family history, as well as complications such as retinopathy and neuropathy screening. Eliciting information with this form of questioning, means patients are provided with limited opportunities to bring their own perceptions of diabetes management into the interaction. Questions primarily function as a way of gathering information for diagnostic purposes, guided by the consultant's biomedical perspective.

Consequentially, the consultant controls negotiations of adherence by employing restrictive forms of questions, to gather information he feels is relevant rather than considering patients' own perceptions of their current diabetes management. Furthermore, the consultants' own perceptions of patients' adherence status are constructed by the information patients provide.

Less restrictive forms of interrogative requests are employed as patients are asked to draw upon their own experiences to describe symptoms relating to any allergies or other conditions.

[C: Consultant; S: Participant 003, Sarah]

10	C:	you are intolerant?
11	S:	I have done the whole time yeah yeah.
12	C:	so?
13	S:	so the last time erm when I was in admitted to the
14		hospital(.)
15	C:	mmm hmm
16	S:	though erm I had a problem (.)
17		and they- my diabetes went right up then/ and they
18		doubled me up on (.) metformin\
19	C:	okay
20	S:	in the morning and at night\
21	C:	mmm hmm
	S:	I have to take Omeprazole otherwise I can't tolerate them
22		((laughs)) at all/
23	C:	erm but-
24		=what kind of symptoms do you-
25	S:	diarrhoea-

26	C:	=diarrhoea?
27	S:	I was like- they come through me like a dose of [(salt)]
	C:	[is it] only
28	S:	metformin or er-
29		=no erm they tried me on er
30		I've tried *all sorts of tablets/
	C:	I can see on here.

Here the patient responds to the consultant by emphasising the extent of her concerns by outlining the length of time she has experienced adverse events. The patient defensively declares that she has always been intolerant to convey her frustration. This also informs the consultant that her experience to medications has not changed, despite the time that has passed. The consultant responds by asking her to expand on her comment. The patient proceeds by providing evidence through a narrative of her own experiences which also emphasises her intolerance. The patient uses laughter as a defence mechanism whilst explaining the extent of her intolerance to the consultant, to which he enquires about her symptoms. The patient again tries to emphasise the extent to which she is intolerant as a way to show her reluctance to take previously prescribed medications. The consultant enquires as to whether she has experienced symptoms with a particular drug, to which the patient confirms that this is not an isolated incident. The consultant informs the patient that he is aware of her medical history through the information provided in her referral letter.

When requesting information about the frequency of patients' check-ups, the consultant implicitly states his expectations. Typically, the consultant uses a declarative informative to communicate his alignment with patients upon their response. Interrogative information requests are used to gather details of patients' check-ups.

[C: Consultant; J: Participant 004, Jean]

234	C:	and your feet are erm [checked] at your local surgery no issues there?
235	J:	[excellent] yeah absolutely excellent\
236		I wear very good shoes/
237	C:	perfect and er:m do you drive?

In this extract, adherence is negotiated as the patient informs the consultant of the strategies used to manage her diabetes. The patient uses positive face (Brown and Levinson 1987) to

maintain a positive image of herself by explicitly stating the way in which she adheres to healthcare recommendations through her appropriate footwear. This provides an opportunity for the consultant to comment, which he does through positive reinforcement showing alignment.

Following this, in all consultations, the medical history phase is dominated by the elicitation of patients' current medications. The consultant re-contextualises the information by using it as a predictor of how successful future recommendations will be**.** Interrogative and declarative information requests are used to verify referral information. Requests of a similar nature are employed to gather more specific details relating to prescribed treatments. During this sequence, utterances are used to acknowledge the patient but also function as a prompt for patients to continue or complete the sequence as illustrated in this excerpt.

[C: Consultant; P: Participant 001, Peter]

35	C:	okay er how many units of insulin do you do?
36	P:	er what do I do now\
37	P:	er sixty in the morning/
38	C:	sixty in the morning yep
39	P:	sixty with something to eat at midday\
40	C:	mmm hmm
41	P:	and then sixty in the evening with something to eat.
42	C:	okay quite a few.

The consultant closes the sequence using a declarative informative to convey his perceptions of patients' current recommendations. This happens on two different occasions, suggesting that the consultant's perceptions are formed as a result of the information presented to him. Commenting on patients' current recommendations functions as a way of negotiating, and therefore constructing adherence by providing his perspective**.** This occurs in two additional sequences, in which the consultant offers recommendations based on the patients' response, due to misalignment with the consultants' perception.

[C: Consultant; D: Participant 005, David]

47	C:	have you ever tried Levemir/ er splitting
48		Levemir?
49	D:	I didn't know that was possible.
50	C:	it's was the e:r SPC for the drug says actually\
51		Levemir should be injected twice daily not once daily.
52	D:	I didn't know- now you see straight away [where-where] my slight problems are?
53	C:	[yeah]
54		right so/ er anything else?

In this example, an interrogative information request simultaneously functions as a way of establishing whether the patient is adhering to the consultant's prescribed recommendations. The patient responds defensively by stating he has never received this information which suggests misalignment. The consultant responds by counter informing him with medical based expertise and refers to institutional guidance to illustrate that the recommendations are evidence based rather than his opinion. Following this, the patient legitimises his non-adherence using a tag question to argue the lack of care he has received. The consultant acknowledges the patient's response and closes the sequence by changing the footing of the conversation.

During this phase, misalignment is also noted as one patient deviates from the consultant's preferred question- answer sequence by spontaneously confessing that he does not adhere to recommendations as suggested. The consultant allows the patient to express himself before using an interrogative information request to change the topic, as illustrated below.

[C: Consultant; D: Participant 005, David]

90	C:	right s:o er-
91	D:	I'll be honest with you/
92		as far as medications are concerned/
93		that's that's my problem because if I have to take it in the
93		evenings or before bed/
94		I forget.
95		I'm- I'm the world's worst/
96		so all my meds are taken first thing in the morning/
97		the only one that isn't taken in the morning is my Levemir before bed.
98	C:	Levemir?

99	D:	that one for some reason I can manage that I am able to get
		that one down but/
100		the- the tablets I forget/
101		which sounds bizarre I know-
102	C:	=can I just ask why you're on Tegretol?

Here, the patient deviates from the preferred question-answer sequence by interrupting the consultant and confessing that he has had issues in adhering to his recommended medical regime. The patient legitimises his non-adherent behaviour by informing the consultant that he has difficulties remembering to take his medications at night which he emphasises through exaggeration. The patient continues to explain that he does not experience these issues in the morning, which informs the consultant that he does attempt to adhere to the recommendations made to him. The patient reaffirms the information again which may suggest he is feeling judged for his confession. The consultant does not acknowledge the patient's comment but instead changes the footing of the conversation to enquire about a different medication.

Due to the domination of question- answer sequences in this phase, patients are not provided with many opportunities to negotiate adherence. As previously noted, the only time in this phase the consultant requests for patients to draw upon their own experiences is when they are asked to inform the consultant of the severity of other conditions and its effect on diabetes management. Employing less restrictive information requests means patients provide the consultant with more detail than he had previously obtained through their referral letter. This occurs in five of the interactions, as in the following example.

[C: Consultant; P: Participant 006, Pam]

27	C:	oh\ you <u>are</u> already on CPAP machine, =okay=
28	P:	=yeah=
29	C:	mmm hmm
30	P:	yeah that's been erm (.) quite a while, yeah
31	C:	hmm
32	P:	and erm (2) I have found it beneficial
33	C:	mmm hmm
34	P:	it's a <u>pain</u>(..)it would be <u>nice</u> if they could make it
		slightly-better but erm(.)
35		they can't <u>obviously</u> or or they would have by now/

36		so I/ I use it with due diligence.
37		erm(.)I'm kind of on this freak thing of like I cannot miss a night/
38		I'm on it all the time because,
39		the(.)person that I saw said if you were to think oh this is too much I'm not going to bother
40		with it,
41		or I'll put it on a couple of times in a fortnight
42		I believe that I would go back to how I was initially,
43		and that just gave me no life whatsoever erm-
44	C:	=what kind of problems-what kind of symptoms did you have before- before you started
45		using the er CPAP?
46	P:	just constantly sleeping\
47		erm(.)and mis-missing days
48	C:	oh that bad?/ okay
49	P:	erm\ some day- you know I mean I've woken up before now
50		and er I've got a very good neighbour\ and she'll say\
51		I'll see you at seven tonight\
52		and I've woken up and I've thought well it's seven o'clock now.[((laughs))]
53	C:	[((laughs))]
54	P:	where is she?
55		so I phoned and said like, have you got problems or if you're not coming round just let me
56		know.
57		and she'll say you're a lunatic she'll say\
58		this is seven in the morning(.)you know,
59		a:nd…you just miss stuff.
60		and one of my worse situations was where I didn't get off the front room floor for\ three
61		days.
62		I just-
63	C:	wow
64	P:	you know(..)erm no inclination\ no strength\ no(..) no get up and go.
65		I mean that had completely gone if you\ know my meaning.
66		erm I started on the machine(..)and(..)
67		after a few days(.)maybe a week-

68	C:	you saw the improvement?
69	P:	I could see an improvement\
70		I mean(.)my family could and my neighbour could as well because I could actually sit up
71		they could say to me(.)ridiculous things like/
72		well you do realise you had an elephant parked in the garage last night\
73		and I'd be like yeah right fair enough\
74		now I'd say what do you mean an elephant?
75		they'd say oh sorry we meant the car and I'm like yeah that's that's right\
76		I'm far more alert\
77	C:	mmm
78	P:	and stuff like that.
79		which is why and I will be honest\
80		I don't want anybody taking that machine off me
81	C:	no I don't think anyone should do that(any)((laughs))
82	P:	no erm\
83		and the- I mean generally you before the machine it's just..real lethargy\
84		erm being a diabetic\it wasn't helpful because there was erm no medication\
85		there there wasn't that there was none,
86		it was just it was so difficult
87		and I had to find a way to fight round that\
88		so what I did do is\(.) I have a list of erm(.)drugs
89	C:	can I see that please?

In this example, the consultant uses a declarative information request to confirm his understanding, suggesting potential misalignment. The patient provides confirmation before expanding the sequence and drawing upon on her experiences to emphasise the changes in her quality of life. In doing so, the patient uses humour and uses face saving strategies (Brown and Levinson 1987) as a means to emphasise her intent to adhere to the recommendations made to her. The consultant uses an interrogative information request to enquire about the patient's initial symptoms, who responds by providing examples. The consultant then employs a declarative information request to express his surprise and acknowledge her experience. The sequence is continued as the patient offers a narrative of her symptoms using rhetorical

questioning for emphasis. The consultant provides floor space, offering utterances to acknowledge the patient which encourages further insight. The patient's narrative is re-contextualised by the consultant using a declarative information request to clarify his understanding, which is confirmed. Narrative is used to emphasise the severity of health issues, functioning as a persuasive mechanism. The sequence closes as the consultant changes the footing of the topic using a declarative informative.

The consultant's perceptions of adherence are constructed on patients' feedback. Therefore, the way in which patients present themselves has implications as to how the consultant will view them in regards to adherence**.** This is particularly relevant in the examination phase where the consultant is provided with further evidence for assessment.

4.5 Verbal and Physical Examination Phase

All seven consultations contained an oral examination phase, while only two featured physical examinations. The aim of this phase is to acquire a better understanding of a patient's condition using institutional guidance which the consultant may perceive as objective measurements of its severity. The consultant must be granted permission to undertake his assessments, placing patients in a position of higher epistemic status. However, due to normative expectations and goals of the consultation, the phase is led by the consultant who possesses the medical expertise needed to undertake the assessments.

During the verbal examination, the consultant's medical expertise is employed to assess patient's blood results and glucose meter readings. Interrogative and declarative information requests are employed to obtain the necessary information. Patients are required to provide information in regards to several aspects of their diabetes management including weight, diet, hypoglycaemia awareness, glucose meter readings and blood test results. However, answers are restricted by the consultant's preferred form of questioning. Interrogative information requests are used to seek more specific details in regards to weight loss, weight gain, food consumption, and whether previous treatments have had a suppressive effect on appetite.

The consultant makes assertions based on his medical expertise, suggesting he has preconceptions of patients' adherence behaviours. An illustration is provided below, demonstrating the consultant's use of a queclarative reformulated as an interrogative information request.

[C: Consultant; P: Participant 001, Peter]

130	C:	yes of course.
131		can I ask, in the last two years that you've been on insulin how much weight have you
132		gained?
133		have you gained weight in the last two years?
134	P:	oh yes- yes.

During one interaction, the consultant used a negative interrogative which appears to reflect his momentary perception of the patient's diabetes management. However, he reformulates the statement mid-sentence using an interrogative information request. Similar forms of assertions emerge in four consultations, relating to weight, drug adherence and HbA1c readings.

[C: Consultant; P: Participant 001, Peter]

322	P:	the last example was it that er e:r for most the day out on the bicycle\
323		hardly anything to eat\
324		and e:r and
325	C:	yeah well-
326	P:	you know
327	C:	yeah well if you have so many units and you don't- so
328		how many- how many meals do you have a day?

The consultant's preference for making evidence-based decisions is highlighted while enquiring into patients' blood glucose readings. Despite asking patients to provide their own accounts, the consultant legitimises his hesitancy in making alterations to treatments by stating he needs evidence before any decisions can be made. Interrogative information requests are employed to elicit information about blood sugar readings. Most patients were asked whether they had brought sugar readings with them and how frequently they were being recorded.

Information requests function as a way of negotiating adherence as they require patients to provide information about their current management while implying certain practices should already be undertaken. The excerpt below illustrates the type of interrogative requests used to acquire this information.

The consultant opens the sequence using a declarative instruction to inform the patient to bring his glucose readings to the next appointment. Interrogative information requests are used as the consultant continues to elicit information to understand patients' current diabetes management. The patient legitimises not bringing his readings with him and draws upon his experiences to demonstrate his adherent behaviours. When asked about the frequency of his sugar readings, the patient deviates from the consultants preferred style of response by drawing upon his perception of how successful he feels his current management strategy is. The consultant states the patient's management is acceptable through positive reinforcement, thus constructing the patient's perceptions of adherence.

[C: Consultant; D: Participant 005, David]

643	C:	okay.
644		next time you attend please bring any sugar readings with you-
645		do you check your sugar levels at home?
646	D:	I have been\ erm…
647	C:	have you got any readings with you today?
648	D:	I haven't because I've just had all these major issues with the- the sugar (readings)
649		I was using this er Dario meter that works with your I phone
650		erm, I it worked really really well and then all of a sudden it broke down\
651		so I-I got in touch with them they said do this do that and then I lost all the readings\
652		and they sent me a new one/
653		but the new one wasn't working so I've now going back to try and find my old machine out
654	C:	and-
655		=er how many times a day do you usually check your sugar levels?
656	D:	I haven't been brilliant but I have to say recently I was trying to test up to four times a day.
657	C:	that would be- that would be er excellent if you can continue that/
658		and if you can do that until we see you next time because/ it
659		will be very useful you know that be able to make any judges in relation to insulin-

Further interrogative information requests were made as the consultant examined patients' knowledge of their hypoglycaemic episodes. Of the five patients who were asked to report their readings, three patients were also examined in regards to their knowledge of hypoglycaemic symptom recognition. Interrogative information requests enabled patients to provide descriptions of their own experiences which allowed the consultant to assess their current management behaviours. Declarative information requests typically followed patient responses to check the consultant's own understanding.

[C: Consultant; P: Participant 001, Peter]

284	C:	[So you've] felt the symptoms
285	P:	oh the symptoms of excessive sweating\
286	C:	mmm hmm
287	P:	e:r and all I did was take something sweet and-
288	C:	=do you- do you check your sugar levels when you have- you know symptoms\
289		indicating a low sugar?
290	P:	I- I did a short while afterwards.
291	C:	okay erm do you know how to recognise then er low sugar\
292		sugar levels what the symptoms are?
293		you said sweating [which is correct]
294	P:	[very very very sweating]
295	C:	okay
296	P:	e:r- I think I er… heart rate goes up a little bit/ yep,
297	C:	yep
298	P:	yep
299	C:	dizziness er hunger [er] blurry vision these are the symptoms\
300	P:	[mmm]
301		[right okay]
302	C:	[that indicate the sugar levels are low]
303		but at that point you need to check your sugar\
304		I mean if you have any of these symptoms you need to check your sugar levels to see how
305		low your sugar levels are\
306		because if they are really low even if you eat something they will not immediately improve\
307		okay so what you should do in that case if your sugar levels are low- below four\

In this example, a declarative information request is employed to confirm the patient's awareness of hypoglycaemic episodes. The patient hesitantly provides a response, drawing upon his experience to evidence his knowledge. The patient is prompted to expand his response so that the consultant can examine his knowledge further. The patient attempts to close the sequence, illustrating he has nothing further to add to the conversation. In response to this, the consultant takes the floor and expands the sequence using a declarative informative to step into a pedagogical role. The use of education in promoting self- management behaviours is not seen in any other phases of the consultation**.** However, this role is also employed during the consultant's assessment of patients' insulin technique. For two consultations, this phase was extended due to the consultant's decision to undertake physical examinations. As the physical examination phase only occurred in two consultations, it could be suggested that this activity is only undertaken when the consultant feels it is appropriate to do so, based on perceptions from his previous line of questioning. Furthermore, it could also be suggested that the verbal examination phase informs the consultant's perception as to whether a further examination would be beneficial in obtaining information about patients' current adherence from his own assessments.

The physical examination enables the consultant to gather information based on physical signs or symptoms, which he assesses through methods rooted in medical expertise. The consultant leads the examination with the expertise needed to extract specific medical information from the patient. In using these methods, the consultant no longer relies upon the patient to provide information. In view of this, rhetorical questioning and declarative informatives dominate the interaction while the consultant undertakes the examinations. Due to the method of assessments used, patients are not required to provide accounts of their experiences and are thus not given many opportunities to do so.

The consultant opens the phase by requesting patients' permission to commence his assessments. However, in view of the consultant's authoritative status, the request does not require a response and functions to inform patients of the commencement of the examination process. Restrictive interrogative information requests employed in the verbal examination stage pre-empt the assessment as the consultant requests that the patient provides information regarding their insulin techniques in a tell me, show me fashion. By examining the injection sites, the consultant assesses whether patients' self-reports and physical assessments align**.** The excerpt below demonstrates the consultant's interrogative line of questioning leading to the physical examination.

[C: Consultant; P: Participant 006, Pam]

390	P:	I don’t(.)worry about it\
391		I don’t do my thighs and I don’t do my arms.
392	C:	do you rotate on the- on the tummy?
393	P:	erm I’ve got quite a big tummy\
394	C:	((laughs))
395	P:	there’s plenty of room to get there\
396		but I do rotate and I’ve heard- I’ve heard things of erm/
397		you can get patches?
398	C:	yeah. yes you can.
399	P:	I’ve got a neighbour and-not this one but I’ve got
400		another neighbour\
401		and she’s a diabetic and she got told off well, you know or
402	C:	=yes.
403	P:	told that she’d got a great big clump of it all in her [skin]
404	C:	[yes] so
405	P:	I don’t and I check\
406	C:	good
407	P:	regularly.
408	C:	good\ that’s very good because if you do
409		then if you inject on that area then the insulin does not absorbed\
410	P:	no.

In this example, the patient negotiates adherence by informing the consultant of her injection technique. Interrogative information requests are used to probe the patient more specifically about practices regarding her technique. In doing this, the consultant not only enquires directly into the patient’s technique but also looks for confirmation that the patient is adhering to recommended practice by restricting their response. The patient uses humour to engage the consultant and provides additional information to illustrate her knowledge. The patient uses positive face strategies to emphasise her adherence to healthcare recommendations. She then informs the consultant that she is aware of the potential consequences involved with non-adherence by drawing upon her neighbour as an example to illustrate this. By doing this, the patient simultaneously puts the consultant in a higher epistemic position by acknowledging him as an authoritative figure. The sequence closes as the consultant acknowledges the patient and

informs her of potential consequences of having a bad injection technique to reinforce his point and show alignment.

After an initial enquiry, the consultant's style of questioning becomes more instructional. Patients are asked to demonstrate their technique for the consultant's scrutiny. A similar format is followed as the consultant undertakes foot assessments to check for any physical signs of neuropathy.

The consultant dominates interaction throughout this phase, as patients are not requested to provide information relating to their presenting symptoms. Instead, the patient and consultant interactions comprise of acknowledgements, as the consultant undertakes the examinations as shown in the example below.

[C: Consultant; P: Participant 001, Peter]

681	C:	so can you please erm close your eyes for me okay keep them
682		shut please okay?
683		do you feel this?
684	P:	I can feel that.
685	C:	okay.
686	P:	yeah.
687	C:	can you feel this?
688	P:	yes yeah yeah.
689	C:	where?
690	P:	on the very top me-
691	C:	on the very top of your eye sockets okay\
692		keep your eyes shut please okay?
693		can you feel this?
694	P:	yeah yeah that's erm the ball of me foot there.
695	C:	okay how about this?
696	P:	yeah that's erm below my little toe.
697	C:	okay this?
698	P:	that's right in the middle of my foot perfect.
699	C:	this?
700	P:	on my heel.
701	C:	okay very good excellent.

After the examination, the consultant provides a summary and concludes the phase before moving onto his recommendations. In both consultations, patients extend the sequence by commenting on the consultant's conclusions. The consultant provides patients with the

opportunity to express their concerns before emphasising the importance of effective diabetes management, which leads him into the final phase of the consultation.

4.6 The Treatment Phase

At the final phase, treatment plans are discussed, and participants' roles and responsibilities are outlined. The consultant leads the discussion by providing explanations of treatment options through individually orientating patients to recommendations. The goal for both participants is to come to an agreement on how the patient will proceed after undertaking a shared decision-making process in relation to their diabetes management.

Recommendations are legitimised but are often communicated using institutional terminology. Medical terminology emphasises the consultant's authoritarian role and epistemic status which is most prevalent during physical examinations and treatment explanation phases, where the consultant's expertise is central to the aim of the consultation. At times treatment options are also discussed in the medical history phase. This typically occurs when interrogative information requests inadvertently signal that the patient has already been considered for recommendations that the consultant was intending on prescribing himself, as shown in the excerpt below.

[C: Consultant; P: Participant 001, Peter]

552	C:	how does- how does that sound to you?
553	P:	o- okay I mean when I was on Victoza-
554	C:	oh you were on Victoza previously [okay?]
555	P:	[for a short while] other
556		than it makes you go to sleep-
557	C:	mmm
558	P:	yeah that made me- stopped you- for a short while\ that
559		stopped me from eating that did.

Dietary recommendations are also discussed during earlier phases of the consultation but are not summarised in the final phase with other forms of treatments. The consultant does not discuss dietary recommendations in all consultations. Instead, patients are signposted to the dietician for advice, suggesting he perceives this topic to be outside of his remit.

Discussions are often initiated using declarative information requests, as patients are asked if they have previously considered a treatment. Restrictive information requests are also

employed, which require patients to confirm whether they are interested in proceeding with the consultant's recommendations. In the example below the consultant states his intentions, but gauges patient's initial views before providing further explanations. The consultant discusses recommendations using medical terminology to provide a detailed explanation of the drug therapy he believes to be appropriate. The consultant continues the sequence by individually orienting the drug's potential benefits, which he does with persuasive discourse. The sequence closes with a tag question which underlines the consultant's statement but also functions as a request to confirm the patient's understanding.

[C: Consultant; P: Participant 001, Peter]

504	C:	the other thing I was going to suggest is if-if you are keen
505		to, if you would like to consider another tablet for diabetes\
506		it's a newer drug called Empagliflozin/
507		it's an SGLT-2 inhibitor a new class drug\
508		er:m it will improve your diabetes control\
509		but also has another affect it causes weight loss\
510		so it will improve sugar levels but it weight- it causes weight loss\
511		the er the weight loss varies from person to person but it can be up to three four five kilos/(.)
512		so it-it can be up to what you need to have the surgery okay?

At times, the consultant uses persuasive strategies to convey his perceptions which emerge in the form of tag questions and rhetorical questioning. This is important to note as little opportunities are given to patients to express their views, and consequentially recommendations are perceived mainly through the consultant's eyes. The dissemination of information dominates this phase, meaning if patients do wish to ask questions they must initiate a sequence and engage the consultant. This phase relies on the consultant's medical expertise and therefore reports of patients' perceptions are not necessary in the consultant's eyes.

Throughout the consultation, the consultant takes knowledge for granted, and at times makes assumptions in regards to patients' own understandings. Judgements are made based on the information patients display during the consultation. This is illustrated in the following example as the consultant makes recommendations that the patient sees a psychologist but does not provide an explanation as to why.

[C: Consultant; J: Participant 002, June]

303	C:	you can- you can still be seen in the clinic\
304		and be followed by the dieticians/
305	J:	right okay.
306	C:	our psychologists/
307		because we've got a psychologist implemented in this service\
308	J:	yeah
309	C:	er and we will monitor no you're your overall diabetes control\

The consultant can also be seen to be dismissive of patients' experiences in place of his own medical expertise**.** This occurs throughout various phases of the consultations but typically occurs as patients raise or legitimise concerns. A notable example occurs during the treatment phase, where a patient expresses concerns about her known intolerance to drug therapies and questions the necessity of the recommendation. Despite this, the consultant makes justifications using persuasive discourse to state his rationale behind prescribing medications.

In the excerpt below the consultant uses persuasive discourse to coerce the patient into agreeing to the recommendation suggested. After the consultant has made his recommendation the patient asks for clarification. The consultant interrupts the patient to respond and emphasises his opinion by repeating his answer. The patient provides confirmation she has understood. The consultant repeats himself for a third time but expands upon his answer by providing other possible options. This suggests the consultant has picked up on the patient's reluctance to his recommendation. He then continues to explain why he has made this suggestion by interrupting the patient after she enquires into the reasons for his suggestion. The consultant provides an explanation using persuasive discourse to emphasise his point. The patient reluctantly agrees to the consultant's suggestion and confirms that she will commence the medication as discussed.

[C: Consultant; S: Participant 003, Sarah]

514	C:	I want you to continue with er metformin two in the morning
		and two in the evening\
515		if you can tolerate it\
516		but-
517	S:	as well as-
518	C:	as well as
519	S:	oh okay right
520	C:	as well as
521	S:	right, okay
522	C:	as well as.
523		if you can't/(.)
524		er:m just lower the dose what's maximum what's the maximum
		tolerated for you dose\
525	S:	right/ okay.
526	C:	take as much as you can\
527	S:	yeah\ okay.
528	C:	okay but you will need the metformin on top of that okay?
529	S:	because this is only a mild one?
530		what when it goes up to the three do you still-
531	C:	=it you er, preferably yes preferably yes. but it does
532		lower HbA1c nicely\
533		er but it-it- only single therapy for you is not a good
		option because your HbA1c is quite
534		high/
535	S:	yeah.
536	C:	if you can tolerate the metformin plus this/
537	S:	yeah
538	C:	your HbA1c will drop significantly.
539	S:	okay.
540	C:	only on this will drop/
541		but not as significantly okay?
542	S:	right/ okay.

The treatment phase closes with a summary of recommendations, as the consultant uses declarative informative statements to outline the responsibilities of both participants**.** This includes the consultant's arrangements in regards to external referrals, as well as patients'

responsibilities in undertaking blood tests, collecting prescriptions and working towards personal weight loss goals.

4.7 Summary

Questions played a key role in undertaking medical consultations, the aim of which was to provide recommendations for effective self-management of diabetes. Three main forms of questions were identified including declarative, interrogative and tag questions. Questions provided a platform for adherence to be negotiated, and therefore constructed throughout various phases of the encounter. The forms and functions of questions were multifunctional, reflecting the goal of the phase, but also dictated patient involvement. The form and function of questions depended on the goal of the speaker and were employed to control discourse, retrieve information and as a persuasive strategy.

At times, interrogative and declarative information requests were used to gather information using restrictive forms of questioning which were led by the consultant. This led the consultant to guide patients' responses, meaning there was little opportunity to negotiate adherence or inform the consultant of any potential barriers.

Interrogative and declarative information requests were used to gather information and assist the consultant in assessing whether he believed patients were adherent to recommendations. The consultant's perceptions were informed by the responses patients presented, which had an effect on the way in which treatment information was provided as well as the way in which the consultation was undertaken.

The forms of questions throughout the phases determined the opportunities for patients to bring their own perceptions into the consultation, as well as how much adherence was negotiated. When patients were given the opportunity to provide their own experiences and enabled opportunities for negotiation. As a result, the consultant obtained a better understanding of patients' current adherence management and enabled any potential barriers or misalignments of adherence to emerge.

Similar forms of questioning were posed by patients to negotiate understandings of healthcare recommendations, re-evaluate current knowledge and re-align perceptions of adherence. Interrogative and declarative questions were employed in order to achieve this. Tag questions also functioned as a way to bring patients own perceptions of adherence into the encounter or are used as a way of legitimising their lack of adherence.

Chapter 5: Discussion

An interactional sociolinguistically informed perspective was taken to explore the ways in which perceptions of adherence are constructed within medical consultations. An examination of the data suggests adherence is constructed through a complex process of negotiation, influenced by both participants throughout the medical encounter. The typology of questions that emerged in the data as shown in Figure 4.1 and Figure 4.2 illustrate the complexities involved in the ways adherence is negotiated.

Perceptions of adherence are dynamic and iterative processes involving ongoing negotiation, which are re-examined after exposure to new information or experiences. The information patients receive about treatments are influenced by the material consultants provide, as well as the way in which it is communicated. It appears several factors are taken into consideration before making decisions whether to continue with the consultant's recommendations.

5.1 Perceptions

Participants' perspectives were brought into the consultation by the way in which they chose to present themselves within the discourse. Consultants referred to tacit knowledge and evidence-based information through verbal and clinical observations which informed their perceptions of patients' adherence status. However, patients drew upon their experiences to illustrate their understandings of diabetes and knowledge of healthcare recommendations. Individual differences in patients' perceptions and experiences were noted throughout all data sets. Differences in presenting symptoms and reports of current challenges in controlling blood sugar levels also emerged throughout the data.

Side effects played an influential part in whether patients adhered to recommendations as noted by Khan, Lasker and Chowdhury (2011). At times, patients prioritised other health conditions over managing their diabetes regime which patients recognised and disclosed during their consultation. These findings are in line with research by Batchelder, Jeffrey and Berg (2013) who found patients had greater concerns for other conditions due to the consequences of not adhering to treatments. Other health conditions were perceived as challenging to manage alongside diabetes regimes if they impacted upon patients' quality of life.

Patients reflected upon their experiences in referring to the success of their diabetes management, whereas the consultant was informed by institutional guidance in line with his epistemic status (Heritage 2012). These differences may be due to misalignments in what patients feel they can achieve, versus what the consultant accepts as adherent (McElfish et al. 2016). In overcoming this, it has been suggested that patients should work towards smaller goals

to assist in the process of accomplishing greater achievements that align with the consultant's expectations (Bandura 1982).

Misalignments of perceptions typically occurred if the information provided in regards to recommendations was unexpected, or if new information did not match both participants' beliefs. A resolution of misalignments occurred when concepts of adherence were reconstructed through negotiation, and new information was re-evaluated. In line with previous research, this was seen through various strategies of discourse, including implicit declarative informative statements and tag questions which functioned as a means of obtaining reassurance. Harres (1998) described the particular importance of tag questions which are a strategy used by consultants to align themselves with patients.

Differences in perceptions emphasise the need to acknowledge the central role patients play in effectively managing their condition, as noted by Lee et al. (2015) who found patients preferred roles and responsibilities played an influential role in the way recommendations were perceived. Therefore, it is important to address misunderstandings to ensure mutual agreements between participants are formed.

5.2 Adherence and Psycho-social Factors

In line with previous research, psycho-social factors played a significant role in the way adherence was constructed throughout the interactions. Patients' perceptions are influenced by the information they acquire through medical encounters, as well as past experiences which illustrate the complexities involved in the way information is processed. These findings support Langst et al. (2015) who found patients' perceptions had a positive or adverse effect on the way in which information was received. Furthermore, differences were noted between patients and healthcare professionals' perceptions, which suggest a need for strategies that take individual circumstances into consideration.

As previously highlighted, adherence is driven by illness representations which are shaped by belief systems (Wiebe and Christensen 1997). These include the presence of symptoms, side effects, as well as the way in which patients believe they manage their condition. Findings from this research support this theory as patients' previous experiences of treatments shaped their expectations of how potentially successful newly prescribed recommendations would be. Further to this, presenting symptoms contributed to the way in which their condition and recommendations for self-management were perceived.

Findings from this study also support Horne and Weinman's Necessity- Concerns Framework

(1999), as patients convey concerns to recommendations which emerge through the act of questioning. Patients expressed apprehensions to the consultant by requesting reassurance and further explanations of recommendations. Rhetorical questions were also employed in seeking the consultant's understanding, or as a way of legitimising reasons for non-adherence. Addressing patients' concerns during consultations is crucial, as current anxieties may outweigh the necessity of adhering to recommendations. This is particularly important as Horne and Weinman (1999) found that patients' beliefs were most influential in predicting adherence than other factors. Consequentially, not addressing anxieties may lead to insufficient understandings or lack of confidence in patients own abilities to undertake recommendations. However, it cannot be assumed that all concerns are raised during consultations, particularly if patients do not feel they can be honest. Furthermore, medically orientating information may be insufficient to reassure patients if their concerns lie within their personal lives, meaning patients' conditions should be considered holistically (Sarangi and Clarke 2002). If concerns are not expressed during consultations, it is important that the consultant does not make presumptions that patients agree to suggested recommendations. Open and engaging relationships should be taken into consideration through the ways in which consultations are conducted. For shared decision-making processes to take place, decisions must be mutually agreed upon by both participants. Healthcare professionals should provide neutral information throughout medical consultations to facilitate informed decision-making processes, in line with Entwistle and Watt (2006) who note the importance of communication involved in consultations.

In accordance with The Health Belief Model (Maiman and Becker 1974), patients considered benefits of recommendations versus potentially negative experiences, before making health-related decisions. Patient considerations were evident through the way in which questions were asked and by informing the consultant of their previous experiences during various phases of the consultation.

The extent to which patient's wish to play an active role in their care was also seen to be negotiated within consultations, which has implications for the way in which recommendations are communicated**.** Thompson (2007) suggest patients' wishes for involvement are time and context dependent which illustrate the complexities involved in adherence and decision making. Locus of Control (Rotter 1966) suggests patients' take ownership of their condition depending upon whether they believe they can make a difference managing the condition themselves, or whether it is out of their control despite any actions they may take. Given this, methods of communication should be considered, as the way recommendations are negotiated influence the way motivational factors are perceived.

These findings put forward a strong argument for approaching consultations individually, in consideration of factors that patients may perceive as barriers in adhering to healthcare recommendations. Baggio et al. (2013) suggest patients should be supported to become competent in managing the ways in which diabetes may impede their daily living. The emphasis of the consultation should consider patient outcomes, not just from a biomedical perspective but also from a patient's perspective. The focus of medical encounters should be to understand the extent to which a patient wishes to play an active role in their consultation, as well as their goals for treatment outcomes. Patient centred care and shared decision-making processes are central to consultations, however taking a predominantly medical perspective does not necessarily allow for patients and consultant's wishes to align. Patients' perceptions should be explored by encouraging open conversations about their experiences. Hu et al. (2012) advocate tailored education programmes that support patients' by addressing negative beliefs and perceptions that act as barriers to adherence.

5.3 Communication

Miscommunication was noted as an obstacle to adherence. The way in which information about recommendations is provided, including health-related information that the consultant communicates, or chooses not to, which inform patient belief systems. Patients were provided with new information during their consultation, which the consultant felt they should have known a priori, suggesting patients either had not been previously informed or were unable to recall this information. It may also suggest healthcare professionals provide different treatment information, depending on what they feel is important. This implies that diabetes management and education is an ongoing process that should be regularly reviewed. Additionally, an argument has been put forward suggesting that linguistics should be considered as a way of personalising health-related advice (Ellis, Connor and Marshall 2014).

The current methods in which questions are employed mean that vital information in regards to the ways in which patients practice recommendations are sometimes missed. This information may be more accessible through more open channels of interrogation**.** Patient knowledge should not be assumed, regardless of the duration of a patient's condition. It would be more appropriate to re-align patient perceptions that the consultant does not agree with, by addressing them in a way that allows patients to report issues so an understanding of the cause of any concerns can be obtained.

Although the consultant engages the patient and provides space, the framing and structure of the encounter is problematic as it restricts the consultant's abilities to move outside of the

biomedical model. The biomedical model does not allow healthcare professionals to undertake consultations in a way that would be more appropriate for chronic conditions. Taking a biomedical perspective means aligning the condition with acute medicine, in which recommendations are formulated from presenting symptoms alone. Potential reasons why questions are asked in this way point towards the frames which healthcare professionals are trained which are insufficient in managing complex chronic conditions such as diabetes.

5.4 Strengths and Limitations

The results of this research should be considered within its context and limitations. In taking a qualitative approach, the emphasis was to collect rich, contextual data which this research aimed to achieve through capturing the ways in which perceptions of adherence are constructed. Qualitative research is not intended to be representative of a population, and due to the number of participants in this research, the sample may not typically represent patients with type two diabetes. However, the characteristics of participants recruited to this research may be transferable to other patient samples in similar in a different secondary care setting.

Consultations were conducted in a specialised endocrine clinic, within a secondary care hospital setting. Newly diagnosed patients and those who were already being cared for by the service were not included in the recruitment process. Patients were considered for inclusion on the basis that they had recently been referred to secondary care for specialist input so that observations could be captured from the first encounter with the consultant which would provide insight into the way in which both participants initially presented themselves and how rapport was built.

It should be noted that all patients approached in clinic agreed to take part albeit one patient who was unable to take part due to work commitments. It was hoped that ten interviews would be achieved, however, due to time constraints and logistical complexities, seven patients were recruited providing twenty-one datasets in total. None of the patients in this sample requested to withdraw their data at any time. It was acknowledged that a bigger sample size would have strengthened this research, as it cannot be guaranteed that theoretical saturation was reached. However, the typology of questions that emerged from the data demonstrated ways in which adherence is constructed through medical encounters with healthcare professionals, and may be generalisable to consultations regarding other chronic conditions. The implications of the form of questions found in the data highlight the importance and need for healthcare professionals to develop effective communication skills, as patients develop their belief systems through these channels.

During the data collection process, building rapport with participants was considered a crucial part of the interview process. Time was spent with patients in the clinic before their consultation and semi-structured interviews to achieve this. As the researcher was responsible for transcribing an analysing each medical consultation, it should be acknowledged that despite reflexive practice, the researcher's position as a member of staff within the hospital still had the potential to influence the data. Taking on the role of a researcher also meant it was possible to uncover issues of professional concern or. However, in these cases, the researcher would discuss the issue immediately with her clinical and academic supervisor and deal with the issue in line with her professional code of conduct. Where possible, the researcher would endeavour to maintain confidentiality. However, in the event of a serious incident this would not be possible. Participants recruited to the study were made aware of this upon agreeing to the informed consent process.

Consultations were held without the presence of the researcher to ensure patients were aware that they were not part of their clinical care team. Despite this, due to both participants' awareness of the audio recording equipment, it must be acknowledged that individuals' behaviours may not reflect natural interaction (Lietz and Zayas 2010). Furthermore, consideration must also be given to the potential influence of the audio-recording equipment on the trustworthiness of the data. It is possible that both participants may have behaved differently by wanting to save face (Goffman 1967). It must also be acknowledged that it is possible that the consultant may have chosen to undertake the medical consultations differently having the knowledge that the consultation was being audio recorded for research purposes.
Politeness theory (Brown and Levinson 1987) argues that individuals hold a public self -image that they wish to uphold. This should be considered not only in the context of the audio-recording equipment, but also in terms of the potential for patients to behave differently towards healthcare professionals as oppose to others who are not involved in their care. Positive face refers to the want to have one's approval or be liked. Medical consultations may contain events where this may be threatened if individuals do not adhere to treatment plans and consequentially feel uncomfortable admitting to non-adherence for fear of judgement. However, semi-structured interviews conducted with both patients and consultant provided an opportunity to gain insight into patients' understandings and perceptions of the events within the consultation. At times patients gave their opinions and thoughts on matters that they did not choose to inform the consultant. This data provided triangulation and context, but also provided insight into how the

patient and consultant chose to present themselves and enact their identity within the discourse (Goffman 1967).

Patient and consultant interviews were directed using a topic guide to cover key subject areas and ensure research reactivity was minimised (Onwuegbuzie and Leech 2007). One consultant was recruited to undertake all consultations and interviews to maintain consistency across all datasets. However as noted by Sarangi (2002), it is common for healthcare professionals to construct different interpretations during consultations and therefore observations of multiple encounters should be taken into consideration for future research. In all seven consultations, similar forms of questions were asked throughout various phases of the medical encounter. It was felt that the length of the interviews and consultations reflected engagement with patients, suggesting the data was trustworthy. Further exploratory research would also be recommended as due to the data collection methods used in this study, other influential voices within the consultation were not captured. A study by Swinglehurst et al. (2014) acknowledged the significant role that personal computers and electronic patient medical records play during medical consultations. This research aimed to investigate how electronic records shape and construct authority within consultations. Approaching the data through sociolinguistics the consultations were examined via video recording. Findings suggested that when electronic records are referred to during consultations, the dynamics and communication between the two parties change. It is for this reason, Swinglehurst et al. (2014) argues that both the computer equipment itself as well as the electronic patient record should be noted as a voice that should be taken into consideration. Video recording should be a method that could be applied to future research on the subject of this thesis to understand if other voices such as patient electronic records, as well as other non-verbal communication shape the way adherence is negotiated during medical consultations.

In light of the complexities discussed, a single interview may be insufficient in fully exploring these issues. It may be more efficient to interview patients over time, in understanding how changes in perceptions occur as the condition develops and patients' needs change. Moreover, observing medical encounters with different consultants may also be beneficial in understanding how patient- healthcare professional relationships develop and interact with perceptions of adherence.

It should be noted that additional data was collected as previously mentioned however, a full analysis of additional data was outside of the scope of this thesis and will be reported elsewhere.

5.5 Implications and Recommendations

In understanding the ways adherence is negotiated, forms of questioning employed during consultations should be reconsidered. As previously discussed, questions reflect the consultant's medical perspective, which requires patients to respond in a restrictive manner. However, differences in epistemic knowledge mean patients' value life experiences differently to the consultant (Heritage 2012). Therefore, current methods of questioning employed in consultations are ineffective in understanding patients' perceptions of adherence. Patients provide valuable information (Spencer et al. 2000) which may influence the direction of the consultation which illustrates the need to re-evaluate the way in which consultations are undertaken.

Findings from this research suggest patients seek reassurance and re-evaluate information related to healthcare recommendations. Patients place a high value on their experiential knowledge as they gather information from other external sources as reflected in the medical consultations. Information is also acquired from healthcare professionals, as patients acknowledge their specialised expertise which is evidenced by asking for reassurance regarding their understandings. This suggests it is important that patients feel fully informed and can make sense of the information provided through various interactions. Healthcare professionals should empower patients to think critically about information and consider it in regards to their current health status. Patients should be encouraged to ask more questions relating to the information they receive, using consultations as a prime opportunity to enquire within a safe and supportive environment.

Within medical encounters, the consultant must be acknowledged in taking a significant role by choosing the information they feel is appropriate to impart to patients. Therefore, the way consultations are led, and the style of communication employed by the consultant during interactions should also be considered due to the role they play in constructing meanings of adherence. It is of particular importance that consultants do not make assumptions or take knowledge for granted. If it is assumed that patients have an awareness or hold knowledge about a subject, misaligning perceptions may arise as they did in the findings of this research. Healthcare professionals should explore patients' current knowledge using open interrogative questions to gain better insight into patients' understandings. Further to this, changes in patients' treatment recommendations expectations should be considered as changes occur in condition severity over time, and other aspects of patient's lives are reprioritised. Haltiwanger (2012)

suggest that support focusing on psycho-social factors may be valuable in helping patients to adapt as the condition progresses.

5.6 Future Directions for Research

The ways in which adherence is negotiated through acts of questioning highlights the importance of how information is communicated and the style in which the consultation is undertaken. This is important for healthcare professionals to consider when assisting patients to self-manage their diabetes. Different forms of questioning should be considered to employ as strategies that place patients in stronger positions, empowering them to speak openly about their perceptions and expectations. By acknowledging and addressing patient concerns adequately, a patient centred approach can be achieved.

Further research is suggested to explore the ways in which the act of questioning can facilitate healthcare professionals in gaining better insight into how patients perceive adherence and how recommendations are understood. More effective consultations should allow patients to take turns by providing floor space, as patients hold valuable information in regards to how their condition has evolved over time. Examining consultations throughout a patient's journey may also be valuable in understanding changes in perceptions as new experiences assist in the re-evaluation of current belief systems.

5.7 Conclusion

This exploratory piece of research has presented a theoretical typology of questions to explain how adherence is constructed in patients with type two diabetes, during medical consultations. A constructivist approach to methodology facilitated the data analysis, guided by interactional sociolinguistics. This enabled the researcher to examine ways adherence is linguistically negotiated and captured the complexities involved in the ways in which interactions influence treatment outcomes. Given the lack of research that has been undertaken using this perspective, this research makes a significant contribution to understanding how adherence is negotiated between patients and healthcare professionals in medical consultations.

The analysis allowed the researcher to become immersed in the data, which enabled a typology of questions to emerge from the data. These indicated that adherence is constructed through negotiation and the act of questioning. Questions play a crucial role in the acquirement of information, as they provide participants with an understanding as to whether their perceptions of adherence are aligned. Healthcare professionals play an important part in in the way questions are asked, but also in the way patients respond to questions throughout consultations.

Findings from this research provide insight into the complexities involved in perceptions of adherence and signify the importance of examining the micro detail of linguistic features.

Psycho-social factors also play an influential part in the way patients make health-related decisions and the way in which information is perceived. These include Locus of Control (Rotter 1966), The Health Belief Model (Maiman and Becker 1974), as well as the Necessity and Concerns Framework (Horne and Weinman 1999). Patients develop beliefs through previous experiences which should be considered when recommendations are made to ensure patients are supported as their care needs and perceptions change.

The findings underline the importance of taking patients own perceptions into consideration when gathering information in formulating a treatment plan. Restrictive forms of questioning are not sufficient in collecting information because the biomedical perspective does not allow for the patient's perspective. Furthermore, guiding patient responses through restrictive forms of interrogative and declarative information requests may have negative consequences, as valuable information regarding patients' experiences may be missed. This may also result in a misalignment of perceptions resulting in non-adherence if patients and the consultant have different beliefs.

By acknowledging patients' perceptions and treatment expectations, healthcare professionals can provide more effective support to make shared decisions based on patients' needs. This will also ensure patients feel able to achieve treatment goals alongside other commitments in their lives. Patients should be informed of all available treatment options and should be provided with enough information to enable patients to make an informed choice, rather than offering treatments that the consultant perceives the patient is more likely to adhere to.

Patients should feel able to be open and honest with healthcare professionals without feeling judged, or that any repercussions will arise as a result of sharing this information. Healthcare professionals should encourage patients to talk openly about their experiences, which should be facilitated by the ways in which questions are asked, and the rapport that the consultant builds during the consultation. This would enable the consultant to gain a better understanding of how patients perceive recommendations and adequately address concerns that may be preventing adherence. Greater support is needed to ensure both participants expectations are aligned before making recommendations for self-management.

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Appendix A: Search Strategy Used for Literature Review

#1 Diabet* AND 'TYPE 2' [ab, ti]

#2 Diabet* type two [ab, ti]

#3 Diabetes mellitus [ab, ti]

#4 Non-insulin dependent diabetes [ab, ti]

#5 Non insulin dependent diabetes [ab, ti]

#6 (#1 OR #2 OR #3 OR #4 OR #5) [ab, ti]

#7 (#1 OR #2 OR #3 OR #4 OR #5) / NOT gestational OR paediatric [ab, ti]

#8 Adherence [ab, ti]

#9 Non adherence [ab, ti]

#10 Non-adherence [ab, ti]

#11 Adherent [ab, ti]

#12 Non adherent [ab, ti]

#13 Non adher* [ab, ti]

#14 Non-adher* [ab, ti]

#15 Nonadheren* [ab, ti]

#16 Nonadher* [ab, ti]

#17 Adheres [ab, ti]

#18 Patient adherence [ab, ti]

#19 Compliance [ab, ti]

#20 Comply [ab, ti]

#21 Patient compliance [ab, ti]

#22 Complied [ab, ti]

#23 Complies [ab, ti]

#24 Compliant [ab, ti]

#25 Willing [ab, ti]

#26 Willingness [ab, ti]

#27 Concordant [ab, ti]

#28 Concordance [ab, ti]

#29 Self management [ab, ti]

#30 Decision making [ab, ti]

#31 (8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20
O 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30)

#32 Perception [ab, ti]

#33 Patient perception [ab, ti]

#34 Perceived [ab, ti]

#35 Views [ab, ti]

#36 Patient views [ab, ti]

#37 Attitude [ab, ti]

#38 Patient attitude [ab, ti]

#39 Perspective [ab, ti]

#40 Patient perspective [ab, ti]

#41 Opinion [ab, ti]

#42 Awareness [ab, ti]

#43 Understanding [ab, ti]

#44 Understand* [ab, ti]

#45 Belief [ab, ti]

#46 Value [ab, ti]

#47 Motivation [ab, ti]

#48 Experienc* [ab, ti]

#49 Expectation [ab, ti]

#50 Feelings [ab, ti]

#51 Thoughts [ab, ti]

#52 (32 OR 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49 OR 50 OR 51)

#53 7 AND 31 AND 53

#54 Limit #53 to (English language and year = 2007- 2017)

Appendix J: Patient Interview Schedule

Interview Questions

- Tell me how you found out about your diabetes? (How long ago was that?)
- What (if anything) do you think caused your diabetes?
- When you found out you were diabetic what information or advice did you receive about managing it?
- How confident do you feel in understanding the effects that diabetes can have on your health?
- Do you feel confident that you could ask a health professional for information about your diabetes or why a change in your care is needed?
- Do you feel you understand why your doctor has advised you follow particular healthcare recommendations?
- Does the information you receive about your diabetes affect how you make decisions about managing it?
- How (if at all) does diabetes affect your life?
- How effective do you think your medication and recommended lifestyle advice will be for managing your diabetes?
- How do you feel handling or managing your diabetes?
- Do you think there is anything you can do to manage your diabetes yourself?
- What does successfully managing your diabetes mean to you?
- What do you do to manage your diabetes successfully?
- Has a healthcare professional* ever spoken to you about their expectations of managing your diabetes? What do you think your clinician's expectations would be?

-Thank you for your time, is there anything else you would like to add to the interview?

Appendix K: Consultant Interview Schedule

Consultant Schedule

- Can you tell me what recommendations you made to this patient in relation to their diabetes?
- Why did you choose to make these recommendations?
- How did you explain the reasons for giving this advice?
- Do you feel the patient understood what options are available to them?
- What was the main message you wanted the patient to take home?
- What did you find most difficult to communicate?
- What do you think the patient's expectations of their treatment are?
- Do you think the patient will take your advice?
- What difficulties do you think this patient will have in taking your advice?

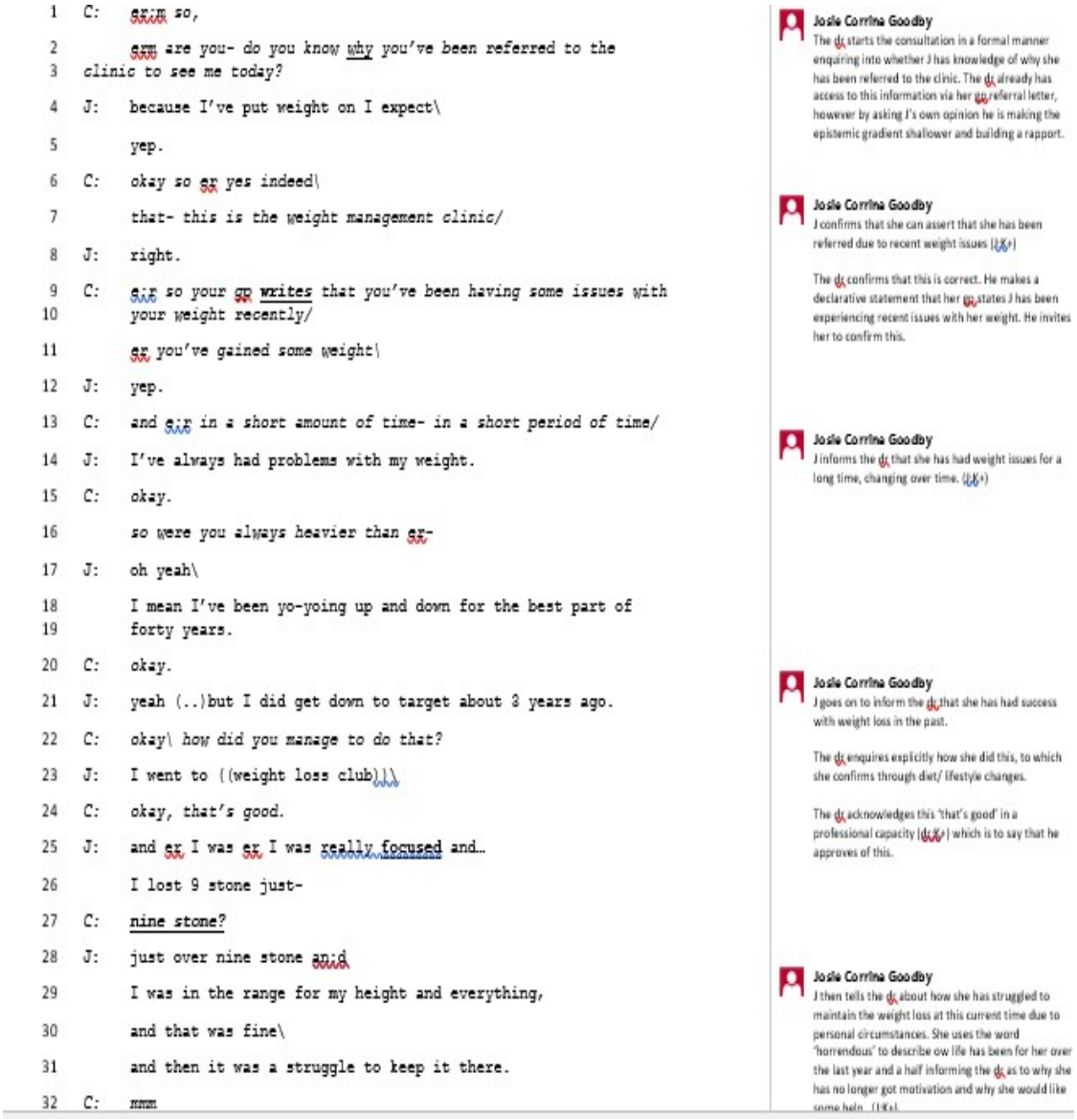
-Thank you for your time, is there anything else you would like to add to the interview?

Appendix L: Interactional Sociolinguistics Conventions for Transcriptions

Transcription Notation

Symbol	Significance
(then)	guess at unclear word
[	overlapping talk begins
]	overlapping talk ends
(.)	a pause less than 1 second
(..)	a pause that is longer than 1 second
(1)	a pause or silence in the discourse that is timed
:::	lengthening of a sound/ word
Well-	truncation to indicate an interruption or cut off or re-phasing of word
=	overlap where speakers do not leave gaps between talk (latching)
(( ))	non-verbal communication
\	slight fall in speech indicating more may be said
/	rising tone in speech
<u>He</u>	indicates emphasis or stress on word

Appendix M: Excerpt of Consultation Transcription



1	C:	ermm so,	
2		erm are you- do you know why you've been referred to the	
3		clinic to see me today?	
4	J:	because I've put weight on I expect\	
5		yep.	
6	C:	okay so er yes indeed\	
7		that- this is the weight management clinic/	
8	J:	right.	
9	C:	erm so your gp writes that you've been having some issues with	
10		your weight recently/	
11		er you've gained some weight\	
12	J:	yep.	
13	C:	and erm in a short amount of time- in a short period of time/	
14	J:	I've always had problems with my weight.	
15	C:	okay.	
16		so were you always heavier than er-	
17	J:	oh yeah\	
18		I mean I've been yo-yoing up and down for the best part of	
19		forty years.	
20	C:	okay.	
21	J:	yeah (..)but I did get down to target about 3 years ago.	
22	C:	okay\ how did you manage to do that?	
23	J:	I went to ((weight loss club))\	
24	C:	okay, that's good.	
25	J:	and er I was er I was really focused and…	
26		I lost 9 stone just-	
27	C:	nine stone?	
28	J:	just over nine stone and	
29		I was in the range for my height and everything,	
30		and that was fine\	
31		and then it was a struggle to keep it there.	
32	C:	mmm	

Josie Corrina Goodby
The dr starts the consultation in a formal manner enquiring into whether J has knowledge of why she has been referred to the clinic. The dr already has access to this information via her gp referral letter, however by asking J's own opinion he is making the epistemic gradient shallower and building a rapport.

Josie Corrina Goodby
J confirms that she can assert that she has been referred due to recent weight issues ((K+)

The dr confirms that this is correct. He makes a declarative statement that her gp states J has been experiencing recent issues with her weight. He invites her to confirm this.

Josie Corrina Goodby
J informs the dr that she has had weight issues for a long time, changing over time. ((K+)

Josie Corrina Goodby
J goes on to inform the dr that she has had success with weight loss in the past.

The dr enquires explicitly how she did this, to which she confirms through diet/ lifestyle changes.

The dr acknowledges this 'that's good' in a professional capacity ((K+) which is to say that he approves of this.

Josie Corrina Goodby
J then tells the dr about how she has struggled to maintain the weight loss at this current time due to personal circumstances. She uses the word 'horrendous' to describe ow life has been for her over the last year and a half informing the dr as to why she has no longer got motivation and why she would like some help. ((K+)

Appendix N: Criteria Used to Evaluate the Credibility of Research Findings

Dependability	Data sourced from patient and consultant interviews were used as a means of triangulation (Fisher and Savin-Baden 2001) which also provided further insight into the events of the consultation. Memos were used to note thoughts, feelings and preconceptions that may have shaped the outcome of the data. This was particularly important as all three datasets brought different perspectives to the interactions.
Credibility	Trustworthiness of the data was strengthened by discussing preliminary results with the supervisory team who are qualitative experts in their respective fields (Henare et al. 2003). Interpretation of the data was reviewed by a member of the supervisory team who specialised in sociolinguistics to ensure the themes emerging from the data could be confirmed. The use of quotations to evidence inferences made within the analysis. Prolonged engagement with patients assisted in establishing rapport.
Confirmability	Researcher's positionality is made explicit. Reflexivity via journaling assisted in minimising researcher influence.
Transferability	Thick descriptions of the research settings, data collection methods, analysis and sampling process including inclusion criteria have been provided. Purposive sampling used to ensure participants can provide insight. Descriptions of participants' characteristics have been provided. The contents of the units analysed retained contextual information (Graneheim and Lundman 2004). Providing a detailed account of the analysis enabling the research to be replicable (Mays and Pope 1995).

Appendix O: Examples of Questions and Phrases Utilised Within the Consultation

Question Type	Function	Phase	Example
Interrogative Information Request	A direct request inviting confirmation as to whether they have access to knowledge	Opening Sequence/ Medical History	er:m so, erm are you- do you know why you've been referred to the clinic to see me today?
Interrogative Syntax~ Rhetorical Question	Used to emphasise a point/ persuade the listener	Medical History	I didn't know- now you see straight away where-where my slight problems are?
Interrogative Syntax~ Known Answer Question	To show knowledge of terminology but also check comprehension	Medical History	I'm sure you're aware of the term a pill popper?
Interrogative Information Request Reformulated as a Queclarative	Assertion that is presented as an information request	Treatment	So er:m do you think there is any room in improving your diet? er do you eat a lot of carbs perhaps?
Negative Interrogative Reformulated into an Interrogative Information Request	Assertion reformulated as an information request	Verbal Examination	yeah well if you have so many units and you don't- so how many- how many meals do you have a day?
Queclarative Reformulated as an Interrogative Information Request	Assertion that is presented as an information request	Verbal Examination	can I ask, in the last two years that you've been on insulin how much weight have you gained? have you gained weight in the last two years?
Tag Question	Request for agreement or confirmation	Treatment	that's a no brainer then isn't it?
Declarative Information Request	Confirmation request	Opening/ Medical History	around two thousand and eight?
Declarative Syntax With Rising Intonation	To clarify understanding via a confirmation request	Medical History	so if you have motivation you can do it?
Declarative Informative Reformulated into an Interrogative Information Request	To request information after making an assertion/ statement	Verbal Examination	I suspect from the time you were diagnosed, when were you diagnosed actually?
Declarative Syntax~ Rhetorical Question	Statement made to emphasise a point	Opening/ Medical History	so yeah okay so it's sensible?

Declarative informative	Used to make a statement or instruct	Physical Examination	can you keep your eyes shut?
Reformulation	to change or revise the way in which the speaker has communicated	Verbal Examination	yeah well if you have so many units and you don't- so how many- how many meals do you have a day?
Footing	A way to signal change in an interaction or change in the framing of communication through either verbal or visual cues.	Medical History	[yeah] right so/ er anything else?
Utterance	a unit of speech, spoken word or vocal communication that provides signals to the speaker. This can reassure an individual that they have understood a situation or guide them in a different direction.	Medical History	mmm hmm
Floor space	allowing an individual to take turns or contribute about or around a topic in conversation	Opening sequence	can I just say that= yes?
Misalignment	when miscommunication occurs, when information is misinterpreted or when both parties do not correspond to each other resulting in uncomfortable or inappropriate linguistic responses.	Medical History Phase	I didn't know that was possible.