

UNIVERSITY OF MALAWI

College of Medicine

Assessing teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's diabetic clinic at Queen Elizabeth Central Hospital

Marrianne Kasiya

MPH, Malawi

Project Supervisor: Theresa Allain

A Dissertation Submitted in Partial Fulfilment of the Requirements of the Master of Public Health Degree

CERTIFICATE OF APPROVAL

This Dissertation by Marrianne Kasiya is approved by the Dissertation Examination Committee

_____

(Chairman, Post Graduate Committee)

_____

(Supervisor)

_____

(Internal Examiner)

_____

(Head of Department)

DECLARATION

I, Marrianne Kasiya, hereby declare that this dissertation is my original work and has not been presented for any other awards at the University of Malawi or any other University.

The study was approved by the College of Medicine Research and Ethics Committee (COMREC) (P.11/16/2061).

The study will be submitted to Malawi Medicine journal for publication.

Name of Candidate Marrianne Kasiya

MM KASIYA

Signature _____

Date 17th October, 2017

DECLARATION BY SUPERVISOR

I, Theresa Allain, declare that this dissertation is submitted with my approval.

Name of Supervisor Theresa Allain



Signature _____

Date 17th October, 2017

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ABSTRACT

Background

Diabetes mellitus is a group of metabolic diseases characterized by chronic hyperglycemia resulting from inadequate insulin production or reduced tissue sensitivity to insulin. Type 1 diabetes is an endocrine disorder characterized by the absolute deficiency of insulin caused by the autoimmune destruction of the β cells of the pancreas. DM is a lifelong condition which requires continuous self-management by patients. Early diagnosis and improved management will reduce the risk of complications of the disease. The majority of young people with diabetes spend many hours at school and/or in some type of child care program. Trained and knowledgeable staff are essential to provide a safe school and child care environment for children with diabetes. The child's parents/guardians and health care provider(s) should work together to provide school systems and child care providers with the information necessary to enable children with diabetes to participate fully and safely in the school and child care setting experiences. This study assessed the knowledge, attitudes, perceptions and awareness of teachers and parents of children with Type 1 diabetes presenting to Queen Elizabeth Central Hospital (QECH), Blantyre, Malawi.

Methods

This study employed a mixed methods research design to data collection, analysis and interpretation integrating qualitative and quantitative approaches. Twenty-three parents attending QECH diabetic children's clinic in the under-five department and 65 teachers from different primary and secondary schools around Blantyre Urban were interviewed.

Results

Majority of the respondents explained that diabetes mellitus was concerned with how overly increased or reduced sugar levels affected the way the body carried out its normal functions. Teachers were more general about the disease, while parents were more particular in defining the disease; 67% of the teachers were willing to host diabetic children in their class compared to 33% who were not willing. It was however clear that the teachers had no confidence in handling such conditions. Fifteen of the 25 parents reported that the school was limited in capacity and expressed concern over their children's performance.

Conclusions

The findings highlight the importance of diabetic education for both the teachers and the parents. The study has identified the need to take into account the major differences between children and their care givers in managing Type 1 Diabetes and also the need to invest considerable amount of efforts and resources aimed at supporting Type 1 diabetic children by establishing school clinics or ensuring the presence of school nurses in schools.

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LIST OF ACRONYMS

MPH:	Master in Public Health
COMREC:	College of Medicine Research and Ethics Committee
QECH:	Queen Elizabeth Central Hospital
DM:	Diabetes Mellitus
WHO:	World Health Organization
MoEST:	Ministry of Education, Science and Technology
SSA:	Sub-Saharan Africa
DEM:	District Education Manager
T1DM:	Type 1 diabetes mellitus
T2DM:	Type 2 diabetes mellitus
SWED:	South West Education Division

CHAPTER 1

1.0 INTRODUCTION

Diabetes mellitus (DM) is a group of metabolic diseases characterized by chronic hyperglycemia resulting from inadequate insulin production or reduced tissue sensitivity to insulin[1]. Correct classification of diabetes is necessary for rightful therapeutic interventions. Diabetes is classified into two major distinctive categories; Type 1 Diabetes mellitus (T1DM) and Type 2 Diabetes (T2D). The former, the focus of this study, is the less common form of diabetes usually occurring in children who form the unit of analysis in this study. Type 1 diabetes is an endocrine disorder characterized by the absolute deficiency of insulin caused by the autoimmune destruction of the β cells of the pancreas[2]. It carries with it no preventive measures. The remedy lies in injecting oneself with alternate insulin. Type 2 diabetes emanates from the inability of the body to effectively use the available insulin. It is estimated that 90% of those that are diagnosed with diabetes suffer from this form of the disease [1]. DM is a lifelong condition which requires regular day to day self-management and regular hospital attendance. Early diagnosis and improved management will reduce the risk of developing complications such as diabetic neuropathy (nerve damage), diabetic retinopathy (eye disease), diabetic nephropathy and cardiovascular diseases such as stroke and heart disease.

Type 1 diabetes is now occurring more frequently in younger children who are often of a pre-school age. Globally a 6.3% annual increase in the prevalence of diabetes among children less than 5 years of age has been reported compared to an overall increase of 3.4% across all age groups [2]. Given the fact that school-aged children spend the greater part of their time in school, the teachers can play a critical role in the support and management of diabetic school children [3].

Wilson et al suggested there could be many educational disadvantages for students with diabetes because of generally poorer health, fluctuating blood glucose levels and possible impairment of selective cognitive functions, missing school coursework due to clinic appointments and more frequent abscesses for illness due to lower immunity [4]. Lack of awareness of diabetes by teachers and pupils can lead to misunderstandings [4]. For example, a lower blood glucose (hypo) or a raised blood glucose(hyper) can cause a child to misbehave and if a teacher does not understand the two, a child may be penalized. Also a child with DM requires medical checkups. Without proper understanding a child's attendance record may be penalized.

As diabetes is a 'hidden disability', children with the condition need to be known to the school to ensure that their safety and medical needs are met during school hours.

At present in Malawi, responsibility for the management of diabetic children of school age is often undertaken by the children and their parents. Increasing diabetes awareness in teachers and parents can increase awareness in broader communities thereby achieving early diagnosis of childhood diabetes and also prevention of complications[3].

Controlling T1DM may be a particularly daunting challenge for children, and may induce feelings of anxiety, worry, or even helplessness. The help and support provided by family, friends, and in particular the school environment, can make all the difference to how children living with T1DM cope in their daily lives [5].

The responsibility for managing children's diabetes rests with teachers as well as parents. This is because during term-time children spend up to eight hours per day at school. Accordingly, schools are considered to be important locations for treatment and management of T1DM, with the aim of minimizing the adverse effects of its complications, or postponing their onset [5].

Lehmkuhl (2007) reported that children who reported greater satisfaction with school support had lower glycosylated hemoglobin (HbA1c) at a 6-month follow-up while children who reported greater sadness at having diabetes and who believed it was less fair that they had diabetes had higher HbA1c at 6-months (HbA1c is a test used to monitor the average blood sugar level during the past six weeks). To achieve an intensive diabetes treatment, it is crucial to have age appropriate on-going education programs for children, but also for parents and other related adults [6]. These education programs include care measures, practical information, and skills training addressed to improve the metabolic control, the psychosocial well-being of children, and the self-control and self-management of the disease [7].

1.1 RESEARCH QUESTION

What are the teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children attending the **C**hildren's Diabetic **C**linic at Queen Elizabeth Central Hospital?

1.2 STATEMENT OF THE PROBLEM

Currently in Malawi, there is scant data on the current status of non-communicable diseases in general and Type 1 Diabetes in particular. It is also only in the most recent decade that major referral hospitals in Malawi have started to register, document and record names of diabetic patients in the country. The World Health Organization (WHO) recommends that patients should have in place an arrangement for annual reviews and appropriate physician recommended protocols of care for diabetic patients. However, the care for diabetic patients, particularly children may not be fulfilled in cases parents or guardians, teachers, and other relations that interact frequently with the children have poor understanding about diabetes. In addition, attitudes and perceptions matter in the provision of health care to diabetic children as they shape how adults might behave towards the children or interact with them. Despite the need for

increasing knowledge levels, promoting positive attitudes and associated actions, in order to foster care for diabetic children, there is no systematic study that has been undertaken to understand these among the caregivers and teachers who diabetic children look to for care and support of their health.

1.3 LITERATURE REVIEW

1.3.1 The Burden of Non-Communicable Diseases in Sub-Saharan Africa

The Sub-Saharan Africa (SSA) region is known to bear a disproportionate burden of diseases compared to the rest of the world. Over the last few decades, there has been an epidemiological transition in SSA from predominantly infectious diseases such as HIV/AIDS to non-communicable diseases such as hypertension and diabetes. The diabetes mellitus epidemic, a non-communicable and metabolic disease, for instance is rising in Africa and is not exclusively a disease of the wealthy as was previously emphasized [7]. The WHO projected that by the year 2015, Non-Communicable Diseases (NCDs) including diabetes would account for 70% of all deaths globally. Diabetes, in particular, is one of the significant causes of morbidity and mortality in low and middle income countries and WHO estimates that in the year 2012 alone, 1.5 million deaths were caused by diabetes, 80% of which occurred in low and middle income countries, including Malawi [7]. The International Diabetes Federation Africa reported that in 2014 the estimated number of deaths due to diabetes in Malawi was 12,799. They also reported the number of adults undiagnosed was 292,600. It is projected that diabetes will become the seventh leading cause of death in 2030 [8].

Rising urbanization and changing lifestyles as two of the factors that reflect economic development are also the commonly identified risk factors driving the diabetes epidemic

including in Malawi. Msyamboza et al. also point to socio-cultural factors, poverty and poor maternal, feotal and infant nutrition, which forms the basis of the developmental origins of NCDs, as other key risk factors favoring the epidemic. The sparse data that is available suggests that the prevalence of the disease in the country varies across age, populations and measurement methods [9].

1.3.2 The burden of Diabetes in Malawi

The diabetes prevalence in Malawi, according to the WHO led STEPS Survey (2010), is 5.6% among adults aged between 24 and 64 years. These are adults that were found to have a raised glucose concentration during the time of the survey [9]. However, there appears to be an equally large population of people that are diabetic but have not been diagnosed and registered with the clinics and hospitals across the country. HIV positive patients have a suppressed insulin rate as a result there is an increase in prevalence rate of the disease in Malawi [8]. Diabetes was not only prevalent in the urban regions but also in the rural areas in both men and women. Occurring in a context of relatively high poverty levels, diabetes in Malawi is a burden patients have to cope with under difficult circumstances [9]**.**

1.3.3 The burden of type 1 diabetes in Malawi

Worldwide, the incidence of type 1 diabetes is increasing, with more children being obese on presentation as a result of the escalating prevalence of obesity in the youth. While there is scant research and data conducted on the disease, it is evident that like other NCDs, T1DM is primarily driven by risk factors that range from genetic to environmental. It is one of the most severe chronic childhood diseases as it is often diagnosed and classified in the first 2 decades of life [10].

The incidence of Type 1 diabetes in Malawian children is unknown. However, T1DM is rapidly increasing in Africa as a whole. Studies have estimated the incidence of T1DM in Africa to be 6.4/100.000/year, however a variation has been found with a range between 4.4/100,000 in Algeria to 20/100,000 in Morocco. Estimates from Sudan report an increased incidence from 9.5/100,000 in 1991 to 10.3/100,000 in 1995**.** T1DM is now occurring more frequently in younger children who are often at a pre-school age. Wilson and Beskine reported a 6.3 % annual increase in the prevalence of diabetes among children under 5 years of age, compared to an overall increase of 3.4 % across all age groups[4]. It is widely believed that diabetic-ketoacidosis (DKA) is an overlooked cause of child mortality due to misdiagnosis and death prior to hospitalisation[10].

An audit of the diabetic children's clinic at QECH in 2015 revealed that there are 69 patients in the clinic; 39 males and 30 females ranging from 4-20 years. The median age of diagnosis is 10 years. The mean HBA1c was 11.43% in 2016. All children are of school going ages. Proteinuria tests revealed 51% microalbuminuria, 28% macroalbuminuria, 20% negative. 2 out of 69 children have neurological complications and 1 out of 20 children who have had an eye check had eye disease. In 2016 there have been 11 Diabetic Ketoacidosis (DKA) admissions, 4 of these were new diagnoses and 1 death from DKA thought to be due to out of date insulin. There is need for research to determine the incidence of type 1 diabetes in Malawi.

1.3.4 Knowledge about type 1 diabetes

There is need to facilitate the appropriate care of the children with DM. School personnel must have an understanding of DM and must be trained in its management and in the treatment of diabetes emergencies to provide a safe environment. Both parents and the health care team must work together to provide school staff with the information necessary to allow children with

diabetes to participate fully and safely in the school experience [11]. Diabetes education must be targeted towards teachers, and other school personnel to help them to be in possession of relevant management and interpersonal skills for providing some elements of guidance and counseling relating to students with DM when necessary. Children with diabetes are required to check their blood glucose level periodically and need to manage their food intake on a daily basis. It is therefore important that school staff have knowledge about these activities and requirements, such as a diet plan for school lunches and physical activities during school hours. School teachers need to make active efforts to improve the management of T1DM in children at school by interacting with children, as well as their parents, and discussing options for effective management[5].

In the United Kingdom (UK) study of 42 trainee teachers, there were only eight participants (20.5%) who reported that they had received information or training on type 1 diabetes, and this was associated with improved overall knowledge. Knowledge and awareness of diabetes appeared to be strongly linked to having studied science, and especially chemistry implying that knowledge and awareness could have been raised theoretically in scientific teaching [12].

In another UK study of approximately more than 300 children with T1DM it was observed that the children belonging to good or high family income background, whose parents (especially mothers) are educated are very well taken care whereas in cases where mothers are not educated the children are neglected. The children belonging to low family income background suffers because the mothers do not follow the teachings, which are given to them regarding the

treatment. Therefore, the role of the mother is very important in treatment of their children suffering from diabetes[13].

1.35 Awareness about type 1 diabetes

The general population is unaware of the existence of diabetes in children of 2–5 years of age and believe that it affects only the middle-aged group. Awareness among the public health care professionals is also very poor, and the syllabus curriculum of medical students does not emphasize much on T1DM. The challenge of lack of awareness of T1DM can be met by increasing public awareness programs, conducting workshops for diabetes educators regarding T1DM in children[14].

In Nairobi, Kenya a survey of 10 questions on diabetes was administered to 1,700 people from the general public. Only 20% of the respondents had 70% of the questions correctly answered[15]. The results underscored the great need for diabetes education programs. The results of a study conducted for trainee teachers in UK highlighted that, even at a very early stage in their careers, 1 in 10 of the survey respondents had already taught a young person with diabetes. However, only one in five of the cohort had received training, with much of this being informal and frequently from people they knew who were living with diabetes. Overall knowledge and awareness was poor, with only 18% of respondents achieving a "satisfactory" score of ≥75%. This suggests that trainee teachers have slightly worse scores than have been reported in qualified teachers, in whom 25% of participants scored ≥75%, implying a potential effect of experience [12]. In Malawi there has never been a study assessing awareness of diabetes let alone type 1 diabetes. This study has identified the gaps on awareness of type 1 diabetes that exist.

1.36 Perceptions towards Type 1 Diabetes

Diabetes management requires support and collaboration from family, school, and society, which is sometimes difficult, as perceptions are more discouraging than positive. In India, girls below 18 years were recruited into a study and after they had reached their marriageable age it was found that it became difficult for them to get married as their parents and in-laws came up with lots of queries about the future of these girls[13]. Conducting parent-centered qualitative research allows exploration of the perceptions and understanding of type 1 diabetes mellitus and the meaning ascribed by children and their parents who live with the condition.

Parents of children with T1DM have specific diabetes-related concerns. For instance, in a study in UK, parents expressed concerns about the possible adverse side-effects of physical activity and spoke specifically about hypoglycaemia. Parents acknowledged that physical activity participation could foster independence in their children, but found it difficult to reach a balance between promoting independence and ensuring their child's safety. This suggests that educational resources may benefit from using techniques to raise awareness in parents about the short and long-term benefits of physical activity for children with T1DM [16].

Diabetes is a lifelong, life-threatening condition that has a significant impact on children's and parents' lives. Developing a deeper understanding of their lives and experiences will enable the delivery of education to meet their specific needs. In Orissa, India during a mid-day meal school program it was observed that the children complained that it was very difficult to take their mid-day dose because the teachers were preventing them from bringing insulin to school and taking their dose due to fear of it involving some risk. Therefore, it was becoming practically difficult

where the children are not learning how to take the medication, especially if the children are small [13].

1.37 Attitudes about type 1 diabetes

Attitudes stand as a link between what people know and what they do about what they know, i.e. practice. It is a psychological variable for diabetic patients and has an effect on the relationship between knowledge and life style change. Extensive research suggests that beliefs and attitudes of primary health care providers and patients determine the possibility of practicing preventive measures such as screening and adherence to treatment and standards of care respectively. Positive attitudes will prompt people to adopt health seeking behaviours, seek more knowledge around the disease, comply with preventive and control guidelines and practices and sensitize others to discourage myths and misconceptions around health care.

Teachers' attitudes are usually a reflection of their knowledge, beliefs and perceptions. School teachers therefore, should have proper attitudes and be knowledgeable with regards to health issues in order to provide good care. Policy recommendations and guidelines recognize that schools are an important environment for increasing physical activity, nevertheless a study reported that teachers were apprehensive about possible negative effects of hypoglycaemia, tending to over treat hypoglycaemic episodes due to lack of understanding about diabetes. Only 75% of staff thought a child could exercise if they had diabetes [16].

There is need to articulate the existing intervention for diabetes prevention and control in Malawi; There is no conceptual framework in this study; only 19 references were cited in the entire dissertation.

1.4 Justification of the Study

More than 170 million people worldwide have diabetes, and this burden is projected to more than double by the year 2030, if current trends continue [20]. The global increase in diabetes prevalence is mainly associated to the ageing of population, the unhealthy diets and sedentary lifestyles that increase the propensity of individuals towards obesity. There is growing evidence that preventing and/or delaying the onset of diabetes can be achieved by adopting healthy lifestyles [21]. Increased physical activity, modest weight reduction, and pharmacological interventions can decrease the incidence of diabetes complications significantly, even among high-risk groups. Simple lifestyle modifications, such as a healthy diet that includes reducing sugar intake, are considered to be essential for the prevention and control of incident diabetes mellitus [22]. Thus, increasing public awareness regarding modifiable diabetes risk factors and healthier lifestyles, and developing strategies to identify and manage at-risk populations, are among the various possible mechanisms being used to reduce the present epidemic of diabetes in many parts of the world. In Malawi different projects have implemented different interventions on diabetes; however most of these programs have focused on the prevention of type 2 diabetes and not management of type 1.This study is meant to shed more light on the context and situation in which children living with diabetes live, their interactions as well as opportunities and challenges they encounter as they live with diabetes. The school and home are the main places where children spend the most of their time hence understanding how they manage their condition in these places can go a long way to making decisions around improving the environment for better child growth. Thus, it is envisaged that findings from this study will spur the development and design of appropriate interventions that seek to enhance and support the

provision of care to children diagnosed with Type 1 Diabetes. Furthermore, effective diabetes management at school has numerous positive outcomes. It can promote a healthy productive learning environment, promote full participation in all curricular and extra-curricular activities, achieve glycemic control, help assure effective response in case of diabetes-related emergency and better academic achievement[15]. Although Malawi was ranked low in the Human Development Index (HDI), it has been demonstrated that for youth development we are doing well hence the need to make sure that our diabetic children are a part of this development and they are not left behind [17]. In addition, as has already been stated, there is little published literature on Type 1 diabetes in the country. This study will go a long way in contributing towards increasing the body of knowledge with empirical evidence of the situation on the ground with respect to the study of NCDs including diabetes.

CHAPTER 2: OBJECTIVES

2.1 Broad Objective

To assess the knowledge, attitudes, perceptions and awareness of teachers and parents of children with Type 1 diabetes presenting at Queen Elizabeth Central Hospital.

2.2 Specific Objectives

- To determine the level of type 1 diabetes related health knowledge among teachers and parents of diabetic children.
- To obtain an understanding of the teachers and parents perceptions towards type 1 diabetes.
- To determine teachers and parent's attitudes towards type 1 diabetes.
- To evaluate teachers and parent's awareness of the differences between diabetic signs and symptoms of hyperglycaemia and hypoglycaemia

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter details the methodology employed in conducting the research. It describes the area in which the study was conducted, the research design, sampling method employed, tools for data collection, data collection and analysis.

3.1 Study Area

This study was conducted in Blantyre city at Queen Elizabeth Central Hospital in the diabetic childrens clinic located in the under 5 clinic. This clinic was specially set up for children below 16 years of age diagnosed with diabetes by the Malawi college of medicine in 2012. Data were collected from Queen Elizabeth Central Hospital, in the diabetic children's clinic and from selected primary and secondary schools in the city. The location was selected because of the unprecedented efforts the hospital has made in recent times to manage and control the disease. Apart from preventive and control programs relating to public health and specifically targeting Type 1 diabetic children, the hospital has records of parents of diabetic children whom it engages in all efforts relating to prevention and control of the disease. The availability of readily available data would therefore be useful to this study.

3.2 Study Population

The study population for this study was composed of parents/guardians/primary caregivers that attended with children at the Queen Elizabeth Central Hospital for treatment and management of their condition. They were 25 in total from within and outside Blantyre. These 25 are part of the 69 parents whose names are registered with QECH. The low number is explained by the fact that

at the time of the study older children (at least 12years) were not in the company of their parents on getting medical attention.

In addition to the parents, teachers were also enrolled for the study. There were 65 teachers, male and female, selected from the surrounding primary and secondary schools in Blantyre. The schools and the teachers were randomly selected using a simple random sampling where each of the schools had equal and known probability of being selected to participate in the study. Some of the schools had children with Type 1 Diabetes while others did not have. In subsequent sections, data has been analyzed along these lines.

3.3 Research Design

This study employed a mixed methods research design to data collection, analysis and interpretation. The design integrates qualitative and quantitative approaches. The design was chosen over single methods design because it uniquely provides an opportunity for informants to explain issues in more depth while at the same time allowing for quantification of the results across communities of interest. The design further provides for follow-up on answers provided by informants. A combination of quantitative and qualitative methodologies generally also increases the ability to triangulate findings but also to understand common perspectives using different approaches. The qualitative component was predominantly explorative and descriptive in nature

3.4 Sample Size

The study employed convenient sampling strategy for selecting the parents. Parents interviewed were only those 25 parents who attended the clinic between January and May 2017 . Schools were either conveniently selected because they had a diabetic child attending the school or were selected using a simple random sampling method where each of the other schools had equal and

known probability of being selected to participate in the study. In sampling of teachers, 25 teachers were conveniently selected because they had a diabetic child in their class while saturation technique was employed in interviewing the remaining 40 teachers' whose names were suggested by head-teachers from the sampled schools.

3.5 Study Period

Data collection took place between January and May 2017, data transcription; theme generation and coding were running concurrently with data collection and the final report was written between June and September 2017.

3.6 Data Collection

A review of literature (desk research) facilitated the development of data collection tools but also helped explain the findings obtained through the study. In addition, a questionnaire(see appendix 1-10) (refer readers to the appendix where the questionnaire is presented) was developed and administered to collect quantitative data from the respondents. The questionnaire contained semi-structured questions aimed at assessing, knowledge, attitudes, perceptions and awareness of T1DM. Such types of questions allowed for quantitative forms of analysis. For the qualitative component, an in-depth interview guide (See Appendix **) was used to gather data from the respondents. The guide contained open-ended questions that sought to provide room for participants to answer questions in more depth and provide detailed explanations. The questionnaires for parents with diabetic children were piloted in the clinic and adjustments to questions were made to allow a more comprehensive assessment of T1DM.

3.7 Data Analysis

All quantitative data obtained using the questionnaire was analyzed using Statistical Package for Social Science (SPSS), a computerized programme for analyzing statistics. For the qualitative

component, the study employed content analysis as a method of analyzing data generated by all the tools. Content analysis is a systematic and objective process of determining the content of published documents, written notes and other such information. In this study, the analysis involved organizing and summarizing the data collected by use of key words and themes, in terms of the basic idea emerging or predefined by the researcher, as coding units. While some codes were predefined by the researcher, others emerged as the analysis was conducted. Depending on how similar or different these were, they were categorized in a way that enables the researcher to draw inferences.

This process thus involved identifying the common expressions, identifications, characterizations and descriptions that emerged from among the various sources of data in the form of concepts, ideas, phrases, terminologies and interactions. In other words, the ideas, words, perceptions and arguments that came out by use of the data collection tools and interactions as a general outcome, were used to build an argument of what the general commonly felt truth constituted. Thus, categories and sub-categories were built to contain similar and different bits of data that were arranged according to how they could be subjected to comparison. The techniques of identifying themes ranged from quick word counts to in-depth line by line scrutiny to create the categories. These thematic categories were important because without them, investigators have nothing to describe, nothing to compare, and nothing to explain[18].

3.8 Study Limitations

The following were the key limitations of the study

- Low response rate from the parents: parents turn out, particularly for older children, to the clinic was very low. Despite a considerably lengthy data collection period, they were not available in the clinic.

- The study did not track schools and respective teachers of each of the children registered at the clinic. This challenge would be attributed to limited funding on the part of the researcher.
- Gender balance was limited on the part of the parents/guardians/primary caregivers as most of the participants in the study were mothers. The study therefore did not capture information from the father's point of view to understand what they know on Type 1 diabetes, their attitudes and awareness on their child's condition.
- Despite collecting quantitative data, generalization is limited since the sources of data were not representative of the total population.
- Use of electronic recorders received resistance from the respondents resulting in a change to using the pen and paper questionnaire for data collection.

3.9 Ethical Consideration

Ethical approval for the study was obtained from the College of Medicine Research and Ethics Committee (COMREC). Copy of approved certificate is on Appendix 11. The study also demanded the participants' time; as such, consent was first sought from the South West Education Division Manager. The study only involved interviewing people and participation was voluntary. The process through which the participants were chosen into the study was explained to the participants so as to remove any element of mistrust. Written consent was also sought from participants at the beginning of the interview. Forms are attached in the appendix 1-10.

Chapter 4: RESULTS

Introduction

This chapter contains the findings of the study based on an analysis of the data collected

from selected number of teachers and parents, as study respondents. The findings are arranged according to the specific objectives of the study. Tools and methods used to arrive at the findings have been described in sufficient detail.

Background Characteristics of the Study Respondents

As mentioned in preceding sections, the study was composed of teachers from selected primary schools around the Queen Elizabeth Central hospital and parents whose children attend these schools and present to the referral hospital. The following sub-sections show selected background and demographic characteristics of the respondents.

4.1 Composition of Respondents in the Study

All teachers that participated in the study were from schools within Blantyre city. Table 1 details the composition of the teachers. In total, 65 teachers from 10 schools participated in the study. The table shows that the highest number of teachers was recorded at St Pius Boys Secondary School whereas the lowest number was at Zingwangwa Primary school. Unlike the teachers, selection of parents to participate in the study was not limited to those within Blantyre. Among the 25 parents attending the diabetes clinic, 4 came from surrounding districts such as Thyolo and Chikhwawa and another 4 came from Blantyre rural including Lirangwe and Chileka

TABLE 1: DISTRIBUTION OF RESPONDENT TEACHERS ACROSS SCHOOLS

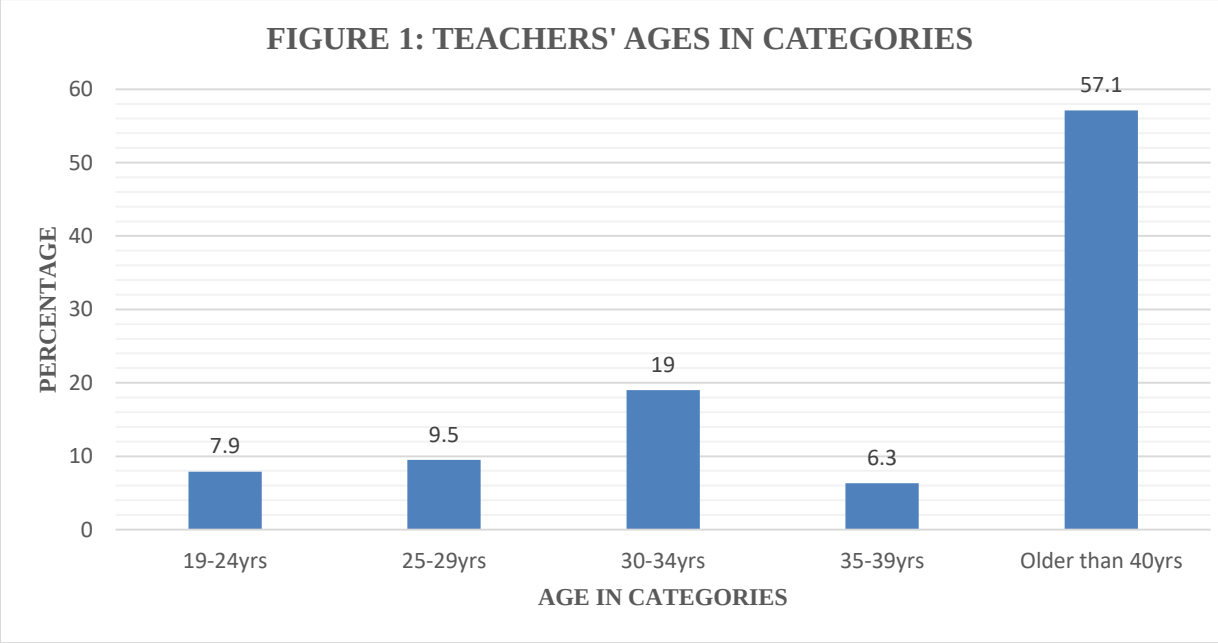
School	Teacher Respondents
St Pius Boys' Primary School	10
Manja Primary School	9
Henry Henderson Institute (HHI)	9

Chichiri Secondary School	7
Njamba Secondary School	7
Zingwangwa Secondary School	7
Blantyre Secondary School	5
Chirimba Primary School	4
St Maria Gorretti Girls Primary School	4
Zingwangwa Primary School	3
Total	**65**

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4.2 Age and Sex of the Respondents

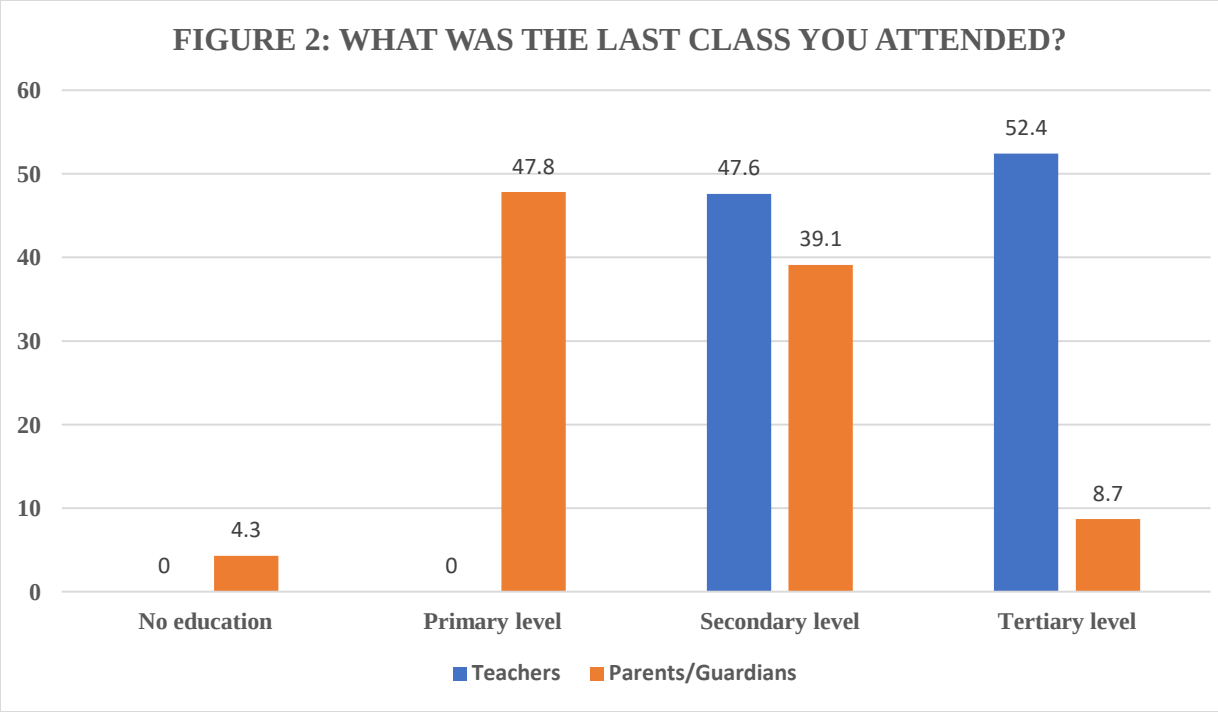
Slightly over half of the teachers (36) in the study were at least 40 years old. The age range was 22-58 years, mean age 40 years. Forty-six teachers (71%) were females and 19 (29%) were males. Figure 1 gives the age breakdown of teachers.



4.3 Educational and Professional Attainment

Teacher behaviors, methodology and mode of instruction used, and activity scheduling, are all important to consider in classrooms where children with Type 1 Diabetic Mellitus learn. These aspects of teaching and instruction form part of the training curriculum of teachers before they are put on placement. It is, therefore, important to consider the level of education and professional attainment of teachers in the study in order to better understand the decisions they make, actions they take and their interactions with the children under their care. Participants in the study were asked to report the last class they attended. Figure 2 shows the results. As can be seen 47.6% of the teachers interviewed had only received secondary education. These are teachers in Primary School. The results imply that they had not received additional teacher training. A total of 52.4% received tertiary education.

On the part of the parents, 4.3% had not received any formal or informal education. There is a likelihood that the literacy levels of those that received no or only primary education could be low. However, 76% of the parents against 24% received a training or sensitization lessons on diabetes and health through a training organized by College of Medicine, increasing the parents awareness of most aspects of diabetes.



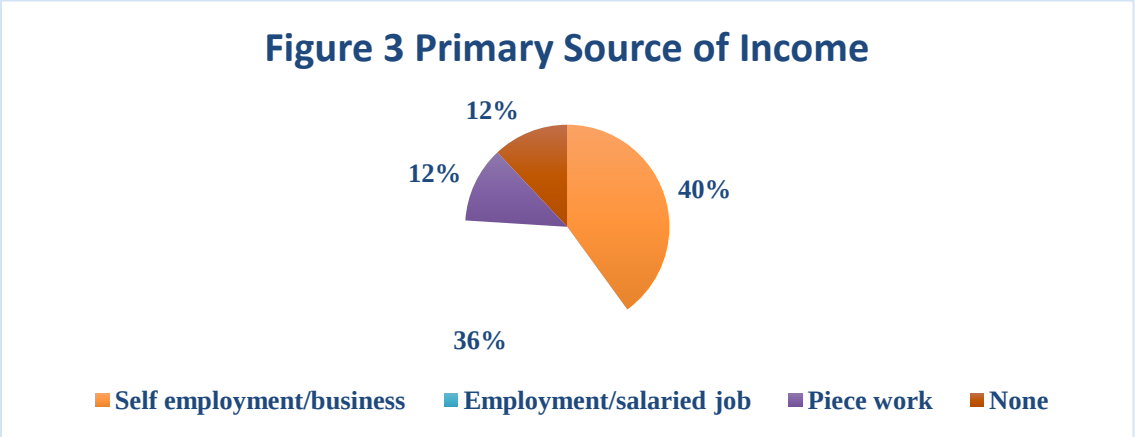
4.4 Family History

The study also inquired about family history of diabetes among the parents and teachers. The assumption is that those teachers with personal experience of diabetes mellitus in their family may have better understanding of diabetes and the needs of diabetic children. This may determine the kind of assistance that children receive from the teachers and parents as part of glycemic management and in case of emergency. 54% of the teachers stated that there was no history of diabetes in their family compared to 36% who reported diabetes within the family; 9.5% did not know about the status of the condition in the family. Among parents/guardians, 18 reported that they did not have anyone with diabetes in their household while 5 of the participants stated that there was diabetes within the family. 2 did not know if they had diabetes in their family or not.

4.5 Primary Sources of Income

Type 1 Diabetes Mellitus is not a condition that bears a huge cost burden to manage but

effective management of the disorder requires a reliable income source. QECH, being a referral hospital requires that some patients have to travel long distances to seek medical attention, for instance, some of the parents/guardians have had to travel from Chikhwawa and Thyolo (outside Blantyre) to present their children for medical attention. Parents/guardians were asked to report on the primary source of income for their households. While such information does not indicate the amount and frequency of income received, it provides a clue about the sectors in which incomes are generated and hence potential for sustainability. The pie-chart above shows that 40% of the parents are self-employed running small businesses while 12% do not have any sources of income (Figure 3).



4.6 Knowledge of Diabetes Mellitus

Increased knowledge about diabetes is necessary in facilitating improvements in control and management of the disease. Individuals that are knowledgeable about the signs and symptoms will be better able to detect the progression of the disease. Knowledge and information can also help people assess risks and take action to control the disease. The

qualitative component of the study sought to understand respondents' description of what the diabetes condition entailed causes, signs and symptoms. Teacher participants were asked to define diabetes as they understood it, to describe how they would recognize a child with type 1 diabetes and list signs and symptoms of hypo- and hyper-glycaemia.

4.6.1Knowledge of Causes of Diabetes Mellitus

Findings suggest that while generally the respondents' basic understanding of the nature of the disease is good, it is varied and application of terminologies that describe them is not uniform across the sets of participants interviewed. That diabetes is a condition associated with changes in the levels and amounts of blood sugar was known by almost every respondent in the study. The majority of the respondents explained that diabetes mellitus was concerned with how increased or reduced sugar levels affected the way the body carried out its normal functions. There was little mention of how this process occurred but the basic understanding was that increased or reduced amounts of sugar beyond the normal threshold resulted in a disease of poor body control of the disease. The following excerpt was obtained from an interview with a woman presenting her child at QECH. It reflects the majority of the respondents' knowledge on the genesis of the disease.

> "This disease occurs when an organ that regulates sugar levels in the blood fails to function properly"-a 24-year-old female respondent.

There were also marked differences in levels of knowledge between teachers and parents regarding the description of the cause of the disease. Unlike the teachers who were more general about the disease, the parents were more particular stating that the disease was caused by a failure of a body organ to regulate amounts of sugar in the blood thereby

prompting conscious injection of insulin into the blood. A few of the parents considered the organ as the kidney while the majority mentioned the pancreas. The actual cause of the failure of the organ to effectively perform its functions was also unknown to almost all respondents in the study. Few of the parents stated that the type 1 disease, commonly found in children, was hereditary. There was no remarkable difference in the way teachers responded to knowledge about diabetes. The presence of a diabetic child in their class had no influence in the teacher's knowledge about diabetes. This can be in part due to the fact that the teachers were unaware of the presence of the child in question. Most parents did not inform their children's teachers of their child's condition.

4.6.2 Disease Risk Factors

The study also sought to assess respondents' knowledge of major risk factors that were associated with diabetes. Consumption of saturated sugar and fatty foods was also considered as the most common factor responsible for diabetes. This would in turn result in obesity and increased body weight. Among the teachers, diabetes was still considered as a "disease of the affluent" with most of them mentioning that it was unlikely for the disease to occur amongst the poor because their sugar intake and fats consumption was often low. As has been noted, some of the participants in the study also mentioned that diabetes in children was hereditary and "nothing could be done to prevent it from occurring".

"Diabetes is a disease for rich families who can afford fatty foods on daily basis and not for the poor." Female teacher, Manja primary school.

Teachers understanding of the disease is different from what parents knew. While the parents agreed that diabetes was related to increased amounts of concentrated sugars and

fats, they did not associate the disease with only the rich. The parents mentioned that they had been told that increased sugar levels, physical inactivity, smoking and concentrated fats among others were responsible for facilitating the disease. However, they believed that these were most applicable among the old and rich and not children of the poor. That the disease was linked to affluence was not true, according to the parents. Their central argument was that they were not rich themselves yet their children were diabetic. They, therefore, believed beyond the common risk factors mentioned, heredity and other "unknown" factors could explain the disease.

> *"*It is not that this disease attacks only the rich, look we are not rich people but our children have it, there definitely is a cause we don't know but the medics are better able to explain it".

4.6.3 Signs and Symptoms of the Disease

Study respondents were also able to identify and describe major signs and symptoms of the disease. In both the parents/guardian and teachers' interviews, increased frequency of urination and water intake were mentioned as being associated with diabetic patients. In addition, the participants reported that diabetic patients would normally be recognized by prolonged and frequent feelings of dizziness, restlessness, loss of weight and tiredness. Participants jointly reported that diabetic patients would normally be recognized by prolonged and frequent feelings of dizziness, restlessness, loss of weight, tiredness.

> *"*diabetic patients will normally experience frequent urination and thirst, once you observe these signs suspect sugar disease"-a Female respondent from Lirangwe.

Complications resulting from progression of diabetes such as impaired vision or complete loss of sight and amputation were also considered to be signs and symptoms of the occurrence of the diseases. Overall, teacher respondents could not differentiate between hypoglycemia and hyperglycemia in terms of observable signs and symptoms. They were, however, able to tell that the two referred to increased and reduced sugar levels in the blood.

4.7 Attitudes towards Diabetes Mellitus

This study considered that to prevent, manage and control diabetes, it was not sufficient to possess only the knowledge of disease, its causes, risk factors and how it can be prevented.

4.7.1 Willingness to Host a Diabetic Pupil

Teachers in the study were asked "would you be willing to accommodate a child suffering from diabetes in your class". A total of 66.7% said "yes" compared to 33.3% who said "no". In the qualitative component, respondents added depth to their responses. Several themes emerged. First, respondents stated that they did not have the technical know-how of managing diabetic children, they therefore feared that the child's conditions would deteriorate under their care. The following excerpt from an interview with a female teacher reflects the common feedback from the respondents.

> "I don't know what a diabetic child eats or drinks when they are hungry, I would not be better placed to advise when they are sick, should I consider it as an emergency? Or is it just a normal sickness? I don't know, so it is difficult for me to say I would be willing to host a diabetic child". -Female teacher from a selected primary school

Additionally, some of the teachers stated that they would not wish to host diabetic children

because the care and support would require them to spend a lot of time taking care of the sick children thereby impacting negatively on their work schedule. They stated that they would be expected to provide special care to the children by counseling them, watching them to ensure they were not ingesting food or drinks that would put them at risk and in worst scenarios escorting them to clinics to seek medical attention. Hosting and taking care of diabetic children was considered as a special case that required teachers with specialized skill in taking care of diabetic children.

> "why don't we do the way we host children with visual or hearing impairment where we have teachers with special needs training among us, some of us don't even know the basics required to help children with diabetes"-Female teacher from a selected secondary school

The study also learnt that some teachers do not consider their classrooms as ready to host children with diabetes. They argued that there was a lot of sensitization and awareness that was needed before the children were accommodated. They reported that most children do not understand the disease, yet because they spend a lot of time with their peers, they may face segregation and stigma which might also affect learning of the children.

4.7.2 Willingness to Support a Diabetic Child

The table below, **Table 2**, runs a cross-tabulation of two attitude variables; willingness to host a diabetic child and interest to support a diabetic child. The study found that although 19 teachers were not willing to host a diabetic child, they admitted that given a situation where a diabetic child was in their class they would support his/her learning in class. Only one teacher stated that they were not willing to host a child and they would not support one given that a child was present in their class. The qualitative component found that the reason

behind such a choice was the fear of lack of skills and resources to support the child. One teacher was undecided or unsure about whether they would or would not support the child. A total of 41 teachers reported that they were willing to host the child but also to support them in their learning.

TABLE 2: TEACHERS' ATTITUDES TOWARDS A DIABETIC PUPIL

Would you support a diabetic child in your class?	**Are you willing to have a diabetic child in your class**	
	No	Yes
No	1	0
Yes	19	41
Un-decided	1	1

4.7.3 Parents'/Guardians' Attitudes around Children's Health, Health Care and Learning

In addition to the predefined questions that were asked to parents on attitudes (interlinked to feelings, emotions, beliefs, values), parents were also asked questions regarding their attitudes towards health-care, diabetic children and learning. The graph below (figure 4) shows the results of some of the measures of attitudes that were assessed. Figure 4 depicts responses from parents when asked to say what they made of each of the statements relating to health care provision.

Figure 4. Shows that out of the 25 parents 22 at least "agree", on a scale that has "strongly agree" as the most positive expression that visiting the clinic regularly would help in improving the health status of their child. Only one person is indifferent about the effect that injection would have on the health of their child. There is a strong feeling among parents of diabetic children that injections help improve the status of diabetic children.

The following sentiments were commonly shared by the parents/guardians/caregivers responding to the question in the qualitative component of the study

> *"*I can tell the difference when the child injects himself, the injection really does help- Male guardian from Bangwe township.

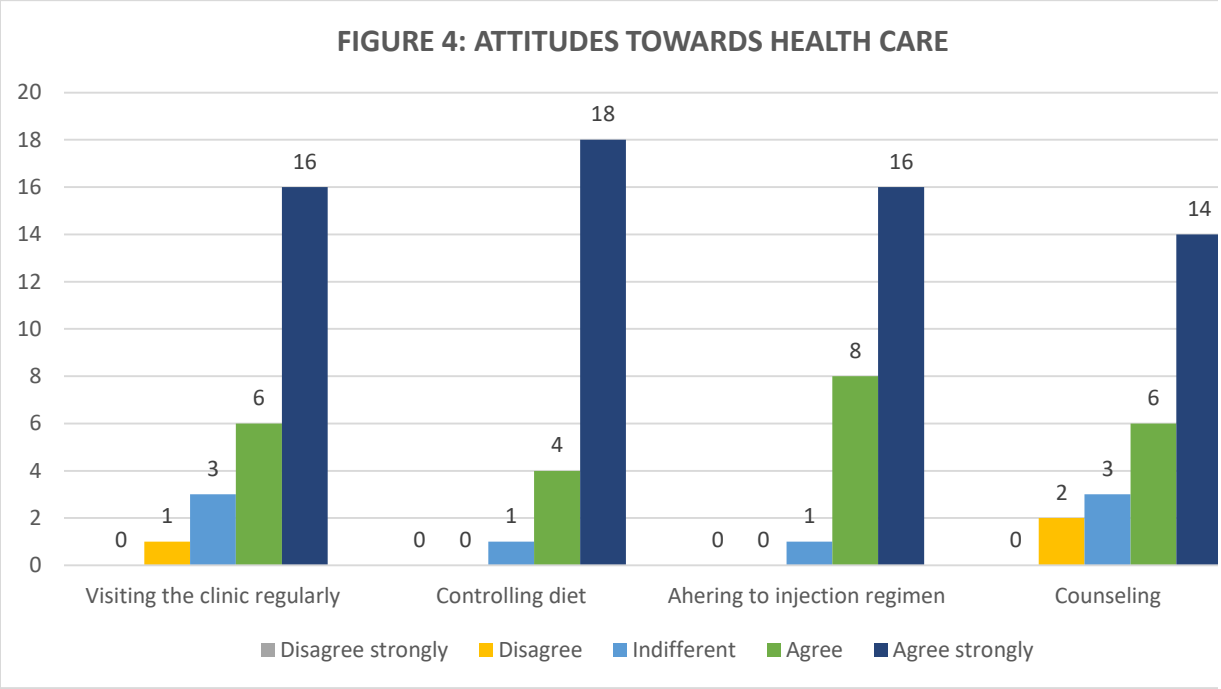
On counseling, however, there were a notable number of parents that reported that they disagreed and were indifferent (5) about its usefulness. In the qualitative component, parents explained that counseling children only worked for grown-up children because the young ones were too young to understand the relationship between diabetes and diet and the need to adhere to injection, for instance.

A further audit of the clinics registers done by the college of medicine assessing clinic progress supported the parents claim on the importance of age in understanding diabetes. HbA1c results of between January and May 2017 revealed that children of over 14 years of age (40% clinic population) had a lower HbA1c compared to children of below 14 years.

In addition, the study inquired about parents' views regarding children's education prospects. Seven of the parents of children going to primary school reported that while they strongly believed that their children could achieve academic progress in terms of proceeding to upper classes and even beyond secondary school, they were also of a strong view that if it were not for the diabetic condition their children could achieve more. However, as the commonly shared sentiments below denote, the disease is a notable distraction.

> *"*my child is intelligent, if it were not for the disease, she would be somewhere, it keeps her from completing on time"-a guardian respondent

Mention was made that often they were required to take children to the hospital for normal regular check-ups and also when the children were sick. Sometimes they could be admitted for days and weeks at critical times of their academic calendar. This meant that progress was affected in school. When asked to state how they viewed the support children received in school 15 of the 25 parents reported that the school was limited in capacity.



Although parents would not have a full knowledge and understanding of the kind of classroom environment, interactions and conditions, they receive feedback on the kind of environment their child was in from reports they get from the teachers as well as the child and their peers. The study therefore further asked the parents to describe the kind of learning that their children received at the hands of their teachers. The table below (Table 3) shows the results of the study on this variable. As can be seen, the majority of the teachers rated the teachers' interaction with their children as not supportive. A total of 15 out of 25 parents

described the support and interaction of the teachers with their child as “bad”. In addition, 5 more rated it ‘very bad”.

Table 3: How would you describe the interaction and support the child receives at school?	
Variable	**Number of Parents**
Very good	1
Good	4
Bad	15
Very bad	5

They explained, in the qualitative component, that most of the teachers were unaware of the condition of their children. Others also mentioned that even if they were aware they would not be able to provide the support they needed because they were not knowledgeable about how to provide the standard or basic care that the children needed. Children, especially in primary school, it was observed are often mobile and tracking them would not be easy for teachers who should also attend to other children and other teaching related work. The quote below from one of the parents reflects the common sentiments from the parents participating in the study.

> *“*I understand the teachers for their lack of knowledge, awareness and understanding about this disease, I have received counseling but I fail to support the child in the best way possible, how about the teachers? Children are not easy to support”-a parent responding to a question in a qualitative component**.**

Chapter 5: DISCUSSION

5.1 Discussion of Findings

From the findings, it is evident that parents/guardians have a better basic level of knowledge and understanding of the nature of diabetes mellitus as compared to the teachers. Their ability to describe the disease and provide relatively more and better details about it can be explained by their interactions with health professionals to whom they present their children. During normal check-up sessions, counseling of the parents and children entails sharing of knowledge regarding the disease between medical personnel and the clients. Lack of detailed and accurate explanation of the metabolic functions that are affected as a result of changes in amounts of blood sugar can be understood by bearing in mind that this is mostly considered to be technical knowledge and also that most parents had not attained a higher level of education limiting their access to information is known to be limited to people who cannot read or write.

However, it is also clear from the findings that although the parents are more knowledgeable about the disease, their knowledge is also limited in some aspects such as causes which would be related to potential exposure to risk factors. Inability to clearly understand and explain the potential causes of the disease would have negative implications on management of the disease. Knowledge of the causes and risk factors would assist in decision making around prevention of exposure to risk factors as well as improved control of the disease to avoid and limit its progression. However, as has been noted knowledge of the key risk factors was limited among the respondents. They mostly associated high sugar levels with genetics and direct fats and sugar consumption.

It is tempting to assume that the study respondents do not know of other factors such as physical inactivity, alcohol abuse and smoking, behaviors that are associated with diabetes. Because these behaviors are key in both prevention and control, they are supposed to be known by teachers and parents who get involved in influencing the health and welfare status of children. Over-emphasizing the role of genetics in the status of blood sugar level and in determining one's diabetic condition can also be misleading. While genetics has a role to play, it is apparent from the sentiments in the study that some of the participants believed that there was little or nothing that could be done for their children given that the condition they were in was outside their control. This speaks to a lack of full knowledge regarding the nature of the disease and how it evolves.

The findings from the study show that generally parents hold strong positive attitudes towards caring for diabetic children. This is in spite of the lack of requisite resources to provide all the support that would be needed. Both parents and teachers agree that they lack the necessary support themselves to help them handle the children. In classrooms that are often congested and with teacher-child ratios that are huge, it is not surprising that teachers are not willing to host a child who is diabetic without having their capacity and conditions improved. Their admission to the fact that they would support such a child if by chance they were identified is a message of hope in the diabetes fight. This speaks to the fact that the social stigma and negative attitudes that are often a cause for worry, can be prevented by using the teachers themselves.

As the study has also noted, not all recommended standards for prevention and management of type 1 diabetes are agreed to by all the parents of children living with diabetes. While injection

has been widely acknowledged as being important to the child's health, other important aspects of care such as health checks, counseling and controlling diet have not received unanimous agreement from the respondents. This could be explained by the fact that each parent has a different experience of diabetes with their children. While counseling might work for some children, it does not work for others particularly when reception is poor. Diet, restrictions and control remain controversial among the public as regards the food that should be eaten as well as the amounts of the food [11]. It is therefore expected that some respondents will still not agree on the effects that diet has on diabetes.

The strong positive belief that parents hold towards the learning of their children is a message that promises continued encouragement of children to attend school. The study found that parents believe that their children can still learn and complete their studies although the disease and condition does affect their learning. The implication of this finding is knowledge that timing for normal check-ups is bad for children's learning. They are forced to absent themselves from school thereby affecting their education negatively. Admissions also take a toll on children's performance in class because they are required to attend to the sickness at the time their peers are making progress in class.

When factored in together with duration of exposure and training, age can be an important factor in determining levels of experience teachers have in supporting children to manage their glycemic condition. From a gender perspective, a large body of literature shows that in Malawi women, and by implication female teachers, bear an addition gender differentiated role as caregivers, taking care of children and household members. The findings about the composition of participants in terms of sex are consistent with the general outlook of the teaching profession

in the country where most of the teachers are females. The situation is particularly so at primary school level[8].

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

Introduction

The chapter presents a summary of key conclusions, conclusions of the study, including their theoretical and managerial implications. Recommendations for practical implementation to solve the problem are also made, including recommendations for further research.

6.1 Conclusions

The overall objective of this study was to assess the knowledge, attitudes, perceptions and awareness of teachers and parents of children with Type 1 diabetes presenting to Queen Elizabeth Central Hospital. In general, awareness, knowledge and attitudes around diabetes Type 1 differ considerably among groups of people that interact with children the most; parents/guardians/primary caregivers and teachers. Increased awareness, knowledge and positive attitudes of parents/guardians/primary caregivers is explained by the frequency with which they interact with health care professionals to, among other things, obtain regular medication.

Knowledge and awareness of Type 1 diabetes was assessed in terms of known causes of diabetes; risk factors of diabetes; signs and symptoms; and implicitly whether remedies would be available for children living with diabetes. The number of teachers and parents reporting knowledge and awareness differed along all the measures of assessment. The study, therefore, concludes that not all caregivers and teachers know or are aware of the basic information relating to Type 1 Diabetes. While the teacher respondents demonstrated awareness of the potential causes of the disease and its signs and symptoms, concrete knowledge of the risk factors is

inadequate. Handling of children with diabetes would be problematic because even at minimum, the teachers are not able to identify children with diabetic problems.

The study also concludes that there is a conditional promise for improved school and learning environment for children with diabetes. This prediction is based on findings demonstrating a strong willingness by teachers to support children with diabetes. However, the study argues that success around this support will strongly depend on the provision of skills and knowledge as well as other supportive facilities in case of emergency. Lack of training has put the teachers in an awkward position with inability to know what is required of them in case they have diabetic children in their classrooms. In addition, teachers would be challenged to monitor children or refer them to clinics in case of need.

The study also concludes that the perception of parents/guardians/primary caregivers towards heath care and school, as basic social services is differentiated. There are strong traces of trust by parents towards the health care services they receive from the hospital and on the contrary, they are less sure about teachers' capacity to handle children with diabetes. Parents know that teachers do not have an informed position as regards the disease. The study concludes that forums that provide room for parent-teacher interactions have not been fully exploited as platforms for promoting children's welfare. Despite this finding, the parents feel positive about the future of their children. This is also despite the fact that the condition has a toll on the children's school enrolment and attendance.

6.2 Recommendations

The findings of the study have informed a careful formulation of recommendations. The study makes the following recommendations.

- Considerable amount of efforts and resources aimed at supporting Type 1 diabetic children should be directed towards establishment of school clinics or ensuring the presence of school nurses in schools. The school nursing role is crucial in the provision and coordination of school health services. The primary role of the school nurse is to support student learning. This is done by implementing strategies that promote student and staff health safety. In the US, the National Association of School Nurses developed a position statement outlining the role of school nurses in the care of students with diabetes in the school setting [19]. The study, therefore, recommends the introduction of school nurses or clinics which will assist the children in management of their conditions not only the diabetic children but also children with other conditions such as asthma and epilepsy. These could be based in hospitals but answer to the medical emergency calls in schools.
- There is need to create opportunities for an appropriate level of ongoing training and diabetes education for school personnel. To facilitate the appropriate care of the student with diabetes, the school personnel must have an understanding of diabetes and must be trained in its management and in the treatment of diabetes emergencies and other chronic conditions. Consequently, diabetes education must be targeted toward day care providers, teachers, and other school personnel who interact with the child, including school administrators. Knowledgeable trained personnel are essential if the student is to avoid the immediate health risks of low blood glucose and to achieve the metabolic control required to decrease risks for later development of diabetes complications. Studies have

shown that the majority of school personnel have an inadequate understanding of diabetes and this study was no exception.

- Children have characteristics and needs that dictate different standards of care. The management of diabetes in children must take the major differences between children of various ages and adults into account. In caring for children with diabetes, professionals need to understand the importance of involving adults in the child's diabetes management. Young children, including school-aged children, are unable to provide their own diabetes care, and middle school and high school students should not be expected to independently provide all of their own diabetes management care. Thus, the education about how to care for a child and adolescent with diabetes must be provided to the entire family unit. The school can present significant challenges or be a source of support to the child with diabetes. Both parents and the health care team should work together to provide school systems and day care providers with the information necessary to allow children with diabetes to participate fully and safely in the school experience

- There should be a more parent centered form of education on diagnosis. The teaching needs to be adapted to the individual families and to help them to learn to live with diabetes in their everyday lives. Rather than merely teaching according to a fixed schedule and cramming knowledge, the education should be parent-centered and provide time for grief and shock. There should also be a greater emphasis on why certain things should be done rather than on what should be done. Focus on the families' perceptions might be helpful in that this could lead to further understanding of the educational process thus making it more accessible for the family members involved. The routines

learned at the hospital should aim at helping parents be good at managing the child's disease, and continuing to lead a normal family life.

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APPENDICES

APPENDIX 1: PARENTS INFORMATION SHEET AND CONSENT FORM IN ENGLISH VERSION

TITLE OF THE STUDY: Assessing Teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

Information Sheet for Individual Interview Participants

[The following text must be read to the participant, who must have his or her own copy to take home]

INTRODUCTION

Hello. My name is _____. You are being invited to participate in a research study conducted by Marrianne Kasiya from the School of Public Health and Family Medicine at the College of Medicine, University of Malawi. I would like to first give you a bit of background to the research. Please, feel free to interrupt me and ask any questions about the project.

PURPOSE OF THE RESEARCH

The overall aim of this research is to assess the knowledge, attitudes, perceptions and awareness of type 1 diabetes in children that present to the children's diabetic clinic at Queen Elizabeth Central Hospital in Blantyre. You are being asked to take part in this interview because we consider that your knowledge, attitudes, perceptions and awareness of type 1 diabetes can help us learn a lot and understand how diabetic children should be managed to improve blood glucose control. I would like to ask you to read this consent form (or I can read it to you, if you so prefer). You will receive a copy of this form and you will go through it. Please ask for clarification wherever you are not clear.

PROCEDURE

We intend to have a discussion with you that will last perhaps 30 minutes. You are free to decline participating in this interview. This will not affect any health services that your child is currently receiving or may require in future.

The information that we obtain from you may be shared with fellow researchers who are involved in this study. It may also be published through meetings or journals. Before sharing in this manner, the information will be combined with that from other research participants, and will also be stripped of identifiers that may link the information to yourself or anyone related to you. This also means that names of study participants, including your own will not be included when sharing the data. However, we will not use any quotes arising from your participation in the study without your consent.

During discussion it is often difficult to write everything that you may say, therefore, with your permission we would like to tape the discussion. Tapes, recording equipment and transcribed data will be kept with identifiers, locked, and only shared with people that have codes to access the data.

RISKS

There is a possibility we may ask you questions about your personal experiences that you may not be comfortable with. You are perfectly entitled to refuse discussing issues that you do not feel comfortable discussing.

BENEFITS

There are no direct benefits to you that we envisage in you taking part in this interview. There is a possibility though that you may feel better talking about health care and other health matters relating to your child's diabetes. What we learn from this interview may help us think about ways in which health services can be improved in the community.

COMPENSATION

You will not receive payment for participating in this study. You will however be provided with refreshments for taking part in this study.

CONTACT DETAILS

If you need to discuss issues related to your participation in this study, or if you have any questions after the discussion feel free to ask and if any questions may arise while we are gone or later please feel free to contact the Principle Investigator of the study: Marrianne Kasiya (0999600638). However, this study has been reviewed and received ethical approval through the College of Medicine Research and Ethics Committee (CoMREC). If you have questions or concerns about your rights, safety and wellbeing, please contact the Secretariat of the College of Medicine Research and Ethics Committee (CoMREC) at College of Medicine, Private Bag 360, Chichiri, Blantyre 3.

CONSENT DECLARATION

Having read and understood the above, you may now indicate either your willingness or lack thereof by signing the consent form below.

APPENDIX 2: Consent form in English

TITLE OF THE STUDY: Assessing Teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

Consent form for Individual Interview Participants

1. I have received and read or had read to me the information sheet provided by the Researcher, that explains in detail the reasons for the study.
2. I have understood the purpose of the research.
3. I have asked all the questions that I have about the purpose of the research and feel that I have enough information about it.
4. I understand what I will be required to do if I agree to participate in this interview.
5. I understand that anything that I say will be kept secret and anonymous.
6. I know that I have the right to stop the interview at any time or to refuse to answer any questions.
7. If I do not agree to take part in this interview I understand that I will not be penalized for doing so neither by the researcher nor by any medical service providers in the future.
8. I voluntarily agree to take part in this interview

---------- -----/--------/------- ----------

Name of participant

(BLOCK CAPITALS) Date Signature or thumb print

---------- -----/--------/------- ----------

Name of Interviewer

(BLOCK CAPITALS) Date Signature

If the participant cannot read or write an impartial witness should sign below:

---------- -----/--------/------- ----------

Name of Witness

(BLOCK CAPITALS) Date Signature or thumb print.

Appendix 3: TSAMBA LA UTHENGA

Kuunika chidziwitso, maganizo, kuganizitsa ndi kuzindikira kwa aphunzitsi ndi makolo pa zamatenda a shuga a type 1 omwe amapezeka mwa ana omwe amayendela ku chipatala cha ana odwala matenda a shuga ku Queen Elizabeth Central Hospital mdera la Blantyre

TSAMBA LA UTHENGA

CHIYAMBI

Ine dzina langa ndi_____. Mukuitanidwa kutenga nawo mbali mu kafukufuku yemwe akupangitsa ndi a Marrianne Kasiya ochokera ku School of Public Health and Family Medicine kusukulu ya ukachenjede yotchedwa College of Medicine, yomwe ili pansi pa University of Malawi. Choyamba ndafuna ndikudziwitseni cholinga cha kafukufukuyu. Chonde, khalani omasuka ndikumandifunsa mafunso m'mene ndikukulongosolerani za kafukufukuyu.

CHOLINGA

Cholinga cha kafukufuku ndikufuna kuunika chidziwitso, maganizo, kuganizitsa ndi kuzindikira kwa aphunzitsi ndi makolo pa za matenda a shuga ya type 1. Mukufunsidwa kutengapo mbali pa zokambirana chifukwa chakuti tikuganiza kuti mmene mwakhala mukuonela ndi maganizo anu paza matenda a shuga ya type 1 zingathandize kuti tiphunzile zambiri ndi kupeza njira zambiri zomwe zingathe kuthandizira ana odwala shuga ya type 1. Tisanapitilire tikupephani kuti muwerenge kaye chikalata cha chilolezo kapena ndikuwerengereni ngati kuli koyenera kutero. Mulandira fomu yimeneyi kuti muyiwerenge ndipo chonde funsani pamene simukumvetsa.

NDONDOMEKO

Tikufuna tikambirane nanu ndipo zokambiranazi zitha kutitengera pafupifupi mphindi makumi atatu (30). Ndinu omasuka kusapitiliza nawo zokambiranazi. Izi sizipangitsa inu kapena mwana wanu kusalandira chithandizo cha zaumoyo pano kapena mtsogolo muno.

Magnizo amene tingatenge kwa inu tizagawana ndi anzanthu amene akukhuzidwa ndi kafukufukuyu. Zithanso kusindikizidwa kudzera mnsokhano kapena zolembelemba. Koma tisanatero maganizo anu azaphatikizidwa ndi a anthu ena amene akutengaponso mbali mukafukufukuyu, ndipo sipazakhala chizindikiro chirichonse chanu kapena m'bale wanu cholumikizira maganizowa. Izi zikuthandizanso kuti maina a otengapo mbali mukafukufukuyu, kuphatikizapo lanu sazatchulidwa pokambirana za mmene wayendera kafukufukuyu. Kotero sitizagwiritsa ntchito maganizo anu omwe mwapereka pakutengapo mbali mu kafukufukuyu popanda inu kuvomereza.

Pamene tikukambirana ndi kovuta kulemba zokambilana zonse ndiye tingakonde mutatiloleza kuti tithe kujambula zokambilanazi mmatepi. Zipangizo zojambulira komanso maganizo anu omwe ajambulidwa, zizasungidwa kumalo obisika komwe okhawo oyenera kudziwa (okhudzidwa) zamaganizowa angafikire.

CHIWOPSEZO

Pali kuthekera kuti titha kukufunsani mafunso ena okhuza moyo wanu omwe mwina simumasuka kuyankha, muli ndi mphamvu zonse kukana kukambirana nawo nkhani zomwe simukufuna.

MALIPIRO

Sitinganene kuti pali phindu lopezekeratu mukatenga nawo mbali pazokambiranazi. Komabe pali kuthekera kuti muzamva bwino ndikumasuka kukamba za izi pamene muli ndi nkhani zokhuza za umoyo. Zimene tikuphunzira mu zokambirana izi zingathandize kuganiza njira zopititsa ntchito zaumoyo mmadera athu.

PHINDU

Simuzalandira malipiro potenga nawo mbali mukafukufuku uyu. Koma tizakupatsani zozilitsa kukhosi pamene tikucheza.

MMENE TINGALUMIKIZIRANE

Ngati muli ndi madandaulo okhuza ndondomeko yakafukufukuyu kapena muli ndi funso tikath kucheza muli omasuka kuyimba telefoni komanso kuyakhula ndi wa mkulu wa kafukufukuyu a Marrianne Kasiya pa nambala iyi 0999600638. Komanso, kafukufukuyu wawunikiridwa ndi akachenjedwe a mu College of Medicine Research and Ethics Committee (COMREC) ndipo avomereza kuti titha kupanga kafukufukuyu popanda vuto linalirilonse. Ngati muli ndi mafunso, zodandaula zokhuzana ndi zaufulu wanu mutha kuyankhulana ndi ogwira ntchito ku College of Medicine Research and Ethics Committee (CoMREC) ku College of Medicine, Private Bag 360, Chichiri, Blantyre 3.

KUVOMEREZA

Mutamvetsa zalembedwa mumtundamu mutha tsopano kuwonetsa ngati mukufuna kutengapo nawo mbali kapena ayi posayina fomu yowonetsa kuvomereza kwanu mmunsimu.

APPENDIX 4 : Chikalata chovomereza

Kuunika chidziwitso, maganizo, kuganizitsa ndi kuzindikira kwa aphunzitsi ndi makolo pa zamatenda a shuga a type 1 omwe amapezeka mwa ana omwe amayendela ku chipatala cha ana odwala matenda a shuga ku Queen Elizabeth Central Hospital mdera la Blantyre

1. Ndalandira ndi kuwerenga kapena anandiwerengera tsamba lokhala ndi uthenga lomwe azakafukufuku anandipatsa limene likufotokoza tsatanetsatane wa zolinga zakafukufuku.

2. Ndamvetsa cholinga cha kafukufuku.

3. Ndafunsa mafunso onse omwe ndinali nawo okhudza cholinga cha kafukufuku ndipo ndili ndi uthenga okwanira pankhaniyi

4. Ndamvetsa zoyenera kuchita ndikavomereza kutengapo mbali muzokambiranazi.
5. Ndamvetsa kuti chilichonse chomwe ndinene chizasungidwa mwa chinsinsi ndi mosadziwika.

6. Ndikudziwa kuti ndili ndi ufulu kuchoka pazokambiranazi nthawi yiliyonse kapena kusayankha funso lirilonse.

7. Ngati ndakana kutengapo mbali muzokambilanazi, ndikudziwa kuti sindizalandira chilango chilichonse kuchokera kwa azakafukufuku kapenanso kwa azachipatala mtsogolomu.

8. Ndavomereza kutengapo mbali muzokambirana zapaguluzi.

----/---------/---------- ----------

Tsiku Siginecha/chidindo cha chala cha otenga nawo mbali

----/---------/---------- ----------

Tsiku Siginechala ya ochita kafukufuku

Ngati muthu sangathe kuwerenga kapena kulemba munthu amene sakutenga nawo mbali asayinile munsimu

---------- ----/------/---- ----------

Dzina la mboni kapena chidindo Tsiku Siginechala/chidindo cha chala

APPENDIX 5: TEACHERS INFORMATION SHEET AND CONSENT FORM IN ENGLISH VERSION

TITLE OF THE STUDY: Assessing Teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

Information Sheet for Individual Interview Participants

[The following text must be read to the participant, who must have his or her own copy to take home]

INTRODUCTION

Hello. My name is _____. You are being invited to participate in a research study conducted by Marrianne Kasiya from the School of Public Health and Family Medicine at the College of Medicine, University of Malawi. I would like to first give you a bit of background to the research. Please, feel free to interrupt me and ask any questions about the project.

PURPOSE OF THE RESEARCH

The overall aim of this research is to assess the knowledge, attitudes, perceptions and awareness of type 1 diabetes in children that present to the children's diabetic clinic at Queen Elizabeth Central Hospital in Blantyre. You are being asked to take part in this interview because we consider that your knowledge, attitudes, perceptions and awareness of type 1 diabetes can help us learn a lot and understand how diabetic children should be managed to improve blood glucose control. I would like to ask you to read this consent form (or I can read it to you, if you so prefer). You will receive a copy of this form and you will go through it. Please ask for clarification wherever you are not clear.

PROCEDURE

We intend to have a discussion with you that will last perhaps 30 minutes. You are free to decline participating in this interview. This will not affect any health services that your student is currently receiving or may require in future.

The information that we obtain from you may be shared with fellow researchers who are involved in this study. It may also be published through meetings or journals. Before sharing in this manner, the information will be combined with that from other research participants, and will also be stripped of identifiers that may link the information to yourself or anyone related to you. This also means that names of study participants, including your own will not be included when sharing the data. However, we will not use any quotes arising from your participation in the study without your consent.

During discussion it is often difficult to write everything that you may say, therefore, with your permission we would like to tape the discussion. Tapes, recording equipment and transcribed data will be kept with identifiers, locked, and only shared with people that have codes to access the data.

RISKS

There is a possibility we may ask you questions about your personal experiences that you may not be comfortable with. You are perfectly entitled to refuse discussing issues that you do not feel comfortable discussing.

BENEFITS

There are no direct benefits to you that we envisage in you taking part in this interview. There is a possibility though that you may feel better talking about health care and other health matters relating to your students diabetes. What we learn from this interview may help us think about ways in which health services can be improved in the community.

COMPENSATION

You will not receive payment for participating in this study. You will however be provided with refreshments for taking part in this study.

CONTACT DETAILS

If you need to discuss issues related to your participation in this study, or if you have any questions after the discussion feel free to ask and if any questions may arise while we are gone or later please feel free to contact the Principle Investigator of the study: Marrianne Kasiya (0999600638). However, this study has been reviewed and received ethical approval through the College of Medicine Research and Ethics Committee (CoMREC). If you have questions or concerns about your rights, safety and wellbeing, please contact the Secretariat of the College of Medicine Research and Ethics Committee (CoMREC) at College of Medicine, Private Bag 360, Chichiri, Blantyre 3.

CONSENT DECLARATION

Having read and understood the above, you may now indicate either your willingness or lack thereof by signing the consent form below.

APPENDIX 6: Consent form in English

TITLE OF THE STUDY: : Assessing Teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's

Diabetic clinic at Queen Elizabeth Central Hospital.

Consent form for Individual Interview Participants

1. I have received and read or had read to me the information sheet provided by the Researcher, that explains in detail the reasons for the study.
2. I have understood the purpose of the research.
3. I have asked all the questions that I have about the purpose of the research and feel that I have enough information about it.
4. I understand what I will be required to do if I agree to participate in this interview.
5. I understand that anything that I say will be kept secret and anonymous.
6. I know that I have the right to stop the interview at any time or to refuse to answer any questions.
7. If I do not agree to take part in this interview I understand that I will not be penalized for doing so neither by the researcher nor by any medical service providers in the future.
8. I voluntarily agree to take part in this interview

---------- -----/--------/------- ----------

Name of participant

(BLOCK CAPITALS) Date Signature or thumb print

---------- -----/--------/------- ----------

Name of Interviewer

(BLOCK CAPITALS) Date Signature

APPENDIX 7: IN-DEPTH INTERVIEW GUIDE FOR PARENTS OF DIABETIC CHILDREN

Assessing Teachers and parent's knowledge, altitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

A. DEMOGRAPHY

Date……

Age…….

Sex M F

Education Status: ……..

Professional Experience …….

Family Status: single Mother Single Father Both parents

Number of children: …….

Family History of Diabetes POS NEG UNKNOWN

B. KNOWLEDGE

1. In your own understanding, what do you know about the disease in terms of:
    - Causes of the disease
    - Risk factors associated with the disease
    - Signs and symptoms
    - Signs of hypoglycemia?
    - Signs of hyperglyceimia?

C. ATTITUDE

2. What is your experience living with a diabetic child?
    - What have you found to be the most difficult aspect of living with the disease?
    - What remedies have you sought to address key challenges?
    - What opportunities have you explored to cope with the condition?

D. PERCEPTIONS

3. what is your perception of the diabetic condition of your child in terms of:
    - Home based management
    - School based management
    - Health care support and provision

E. AWARENESS

4. Have you ever had training on Diabetes?
5. How would you describe the kind of support that you receive from health care providers such as hospitals and clinics?
    - In what areas, would you commend the providers?
    - Where do you think, they could do improve?
6. How would you describe the kind of support that you receive from schools where your child/children go to?
    - What areas would you commend them for as it relates to the condition of your children?
    - Where would you like them to improve in relation to the condition of your child/children?
    -
7. Do you have any additional information, question or remarks relating to what we have discussed?

APPENDIX 8: IN-DEPTH INTERVIEW GUIDE FOR PARENTS OF DIABETIC CHILDREN CHICHEWA VERSION

Assessing Teachers and parent's knowledge, altitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

Tsiku……

Dzina……

Zaka…….

Bambo/Mayi……

Maphunzilo: …….

Okwatila/Osaakwatila……

Muli ndi ana angati: ……..

Shuga ilipo ku mtundu:……

Komwe mukukhala……

Nambala ya phone……..

Kapezedwe ka ndalama……..

CHIDZIWITSO

1. Mukudziwa kwanu, mungandifotokozerepo zomwe mukudziwa zokhudzana ndi nthenda imeneyi ya shuga:

- Chomwe chimayambitsa matendawa
- Zomwe zimachititsa kuti matendawa ayambe
- Zizindikiro ndi ziziwitso za matendawa
- Zizindikilo za shuga yokwela
- Zizindikilo za shuga yotsika

MAGANIZO

2. Mungaufotokoze bwanji moyo wanu wa tsiku ndi tsiku wokhala ndi mwana amene ali ndi nthenda ya shuga?

- Ndi mavuto anji omwe munakumanapo nawo?
- Munagwiritsa ntchito njira yanji kuthana ndi mavutowa?
- Kodi munapeza njira zanji zodalilika zokulimbikitsani pamene mukukumana ndi vuto limeneli?

KUGANIZITSA

3. Kodi maganizo anu ndi otani mukalingalira za kasamalidwe ka mwana wanu pamene akudwala nthendayi mu ma gawo awa:

- Chisamaliro chomwe amalandira pakhomo
- Chisamaliro chomwe amalandira ku school
- Chisamaliro cha ku chipatala

KUZINDIKIRA

4. Munayambapo mwapanga ma phunziro a za mthenda ya shuga?
5. Kodi mungandifotokozerepo za mtundu wa chithandizo chomwe mumaandira kuchokera kwa anthu ogwira ntchito ku chipatala?

- Ndi mbali iti yomwe mungawayamikire anthu a chipatalawa kutengera ndi chithandizo chomwe mumalandira?
- Ndi mbali iti yomwe mukanakonda akanakonza kuti chithandizo chawo chipite patsogolo?

6. Kodi mungandifotokozerepo za mtundu wachithandizo chomwe inu kapena mwana wanu amalandira kuchokwera ku sukuru yomwe amaphunzira?

- Ndi mbali iti yomwe mungawayamikire anthu amenewa kutengera chithandizo chomwe mumalandirachi?
- Ndi mbali iti yomwe mukanakonda akanakonza kuti chithandizo chawo chipite patsogolo?

7. Mungakhale ndi mawu ena owonjezera?

APPENDIX 9: IN-DEPTH INTERVIEW GUIDE FOR TEACHERS OF DIABETIC STUDENTS

Assessing Teachers and parent's knowledge, altitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

A. DEMOGRAPHY

Age…….

Sex M F

Education Status: ……..

Professional Experience …….

Family History of Diabetes POS NEG UNKNOWN

B. KNOWLEDGE

1. What is diabetes?
2. What are the 4 signs and symptoms of DM?
3. What are the signs of hypoglycemia?
4. What are the signs of hyperglyceimia?

C. ATTITUDE

5. Are you aware you have a diabetic child in your class? If yes proceed to question 6 if no to 7.
6. What did you feel when you were first informed you had a diabetic child in your class?
7. Are you willing to have a diabetic child in your class?
8. Do you give support to the diabetic child in your class?
9. Are diabetic children eligible to attend the physical education course?

D. AWARENESS

10. What is your role in educating students about Diabetes
11. Have you ever had training on Diabetes?
12. What would you do if a child went into Hypoglycaemia?

APPENDIX 10: IN-DEPTH INTERVIEW GUIDES FOR TEACHERS WITHOUT DIABETIC STUDENTS

Assessing Teachers and parent's knowledge, altitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital.

E. DEMOGRAPHY

Age…….

Sex M F

Education Status: ……..

Professional Experience …….

Family History of Diabetes POS NEG UNKNOWN

F. KNOWLEDGE

1.What is diabetes?

2.What are the 4 signs and symptoms of DM?

3.What are the signs of hypoglycemia?
4.What are the signs of hyperglycemia 8?

G. ATTITUDE

5.Are you willing to have a diabetic child in your class?
6.Would you give support to the diabetic child in your class?
7.Are diabetic children eligible to attend the physical education course?

H. AWARENESS

8.What is your role in educating students about Diabetes
9.Have you ever had training on Diabetes?
10.What would you do if a child went into Hypoglycaemia?

APPENDIX 11: CERTIFICATE OF ETHICS APPROVAL



CERTIFICATE OF ETHICS APPROVAL

This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled:

P.11/16/2061 – Assessing teachers and parent's knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's diabetic clinic at Queen Elizabeth Central Hospital by Marrianne Mbumba Kasiya

On 1st December 2016

As you proceed with the implementation of your study, we would like you to adhere to international ethical guidelines, national guidelines and all requirements by COMREC as indicated on the next page

Dr. C. Dzamalala- Chairperson (COMREC)

Approved by College of Medicine
01 DEC 2016
(COMREC)
Research and Ethics Committee

1st December, 2016
Date

APPENDIX 12: LETTER OF SUPPORT FROM THE MPH TUTOR

COLLEGE OF MEDICINE
Public Health Department

TO: Chairperson, COMREC

FROM: MPH Tutor

DATE: October 06, 2016

SUBMISSION OF MPH RESEARCH PROPOSAL

Please find enclosed research proposal from our MPH student Marrianne Kasiya, version I, entitled, **"Assessing Teachers and parents knowledge, attitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's diabetic clinic at Queen Elizabeth Central Hospital ".**

The proposal was reviewed by Community Health Research and Postgraduate Committee and was approved for submission to COMREC. The thesis supervisor of this student, Dr. Theresa Allain has endorsed the submission.

Thank you.

Rob Moodie

Professor Rob Moodie
MPH Tutor

Approved by
College of Medicine
0 ' DEC 2016
(COMREC)
Research and Ethics Committee

APPENDIX 13: SUPPORT LETTER FROM SOUTH WEST EDUCATION DIVISION MANAGER

Telephone: (265) 01 912 437/870 677
Fax: (265) 01 870 821
E-mail: swed@sndp.org.mw

All correspondences should be addressed to:
The Education Division Manager

In reply please quote: Ref. No. SWED/1/1

SOUTH WEST EDUCATION DIVISION
PRIVATE BAG 386
CHICHIRI
BLANTYRE 3
MALAWI

15th September 2016

RE: SUPPORT TOWARDS ACADEMIC RESEARCH

Marrianne Kasiya is a student at College of Medicine (CoM). She is studying her Master of Public Health degree.

Marrianne would like to conduct a research in our public schools focusing on school going children that are living with diabetes.

I, therefore, write to request your good office to assist her accordingly.

Attached are details of her research topic.

Sincerely yours,

Henry Gwede
EDUCATION DIVISON MANAGER (SWED)

Approved by
College of Medicine
0 ' DEC 2016
(COMREC)
Research and Ethics Committee

APPENDIX 14: SUPPORT LETTER FROM QUEEN ELIZABETH CENTRAL HOSPITAL DIRECTOR

Telephone: (265) 01 874 333 /877 333
Facsimile: (265) 01 876928
Email: queenshosp@globemw.net

All communications should be addressed to:
The Hospital Director

In reply please quote **No. QEC/GEN/2**

QUEEN ELIZABETH CENTRAL HOSPITAL
P.O. BOX 95
BLANTYRE
MALAWI

2nd November 2016

The Chairperson
COMREC
P/Bag 360
Chichiri
Blantyre 3

Dear Sir,

RE: ASSESSING TEACHERS' AND PARENTS' KNOWLEDGE, ATTITUDES, PERCEPTIONS AND AWARENESS ON TYPE 1 DIABETES IN CHILDREN PRESENTING TO THE CHILDREN'S DIABETIC CLINIC AT QECH BY MARRIANNE KASIYA

We are writing in support of the above named study that it can take place at this hospital as envisaged. It will be a descriptive qualitative study aimed at assessing teachers' and parents' knowledge, attitudes, perceptions and awareness on type 1 diabetes.

We hope that the results of this study will further inform the improvement of knowledge about diabetes to guardians with the objective of early diagnosis and improved community management. We support that this study take place at this hospital.

Dr Andrew Gonani
HOSPITAL DIRECTOR

Approved by
College of Medicine
0 DEC 2016
(COMREC)
Research and Ethics Committee

APPENDIX 15: SUPPORT LETTER FROM PEADIATRICS HEAD OF DEPARTMENT

UNIVERSITY OF MALAWI

College of Medicine
Private Bag 360
Chichiri
Blantyre 3
Malawi

Telephone: 0993630543

12th October 2016

The Chair
COMREC
University of Malawi College of Medicine
P/B 360
Blantyre 3

Dear Sir

We are writing in support of the study titled "**Assessing Teachers and parent's knowledge, altitudes, perceptions and awareness on type 1 diabetes in children presenting to the children's Diabetic clinic at Queen Elizabeth Central Hospital."**

The Paediatrics department at QECH runs a diabetic clinic and the majority of the patients are in school. It is important that the environment at home and school is supportive so as to achieve good glycaemic control in these patients. It is therefore important to understand the teachers and parent's knowledge, perceptions and awareness on type 1 Diabetes. The results will help with development of guidelines that can better capacity build teachers and parents who are looking after children with type 1 diabetes.

We fully support this study.

Yours sincerely,

Dr Queen Dube (Clinical head of Paediatrics and Child health)

Approved by
College of Medicine
0 ' DEC 2016
(COMREC)
Research and Ethics Committee