

# **Socio- Cultural Dynamics Influencing Diabetes Control: A Case Study of Vihiga District Hospital, Kenya**

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## **ABSTRACT**

*The purpose of the study was to assess Socio-cultural dynamics influencing diabetes control among patients of Vihiga District Hospital. The main objectives were to determine the implication of economic status in the control of diabetes amongst patients in Vihiga District Hospital, to establish the effects of social lifestyle on the control of diabetes amongst patients in Vihiga District hospital, to establish the effects of the patients cultural beliefs on the control of diabetes in Vihiga District Hospital and to determine the contribution of family support in the control of diabetes in Vihiga District Hospital. The study employed a descriptive study design with qualitative and quantitative methodologies for collecting data and through in-depth interviews with key informants. Quantitative data was analyzed through SPSS and Ms-Excel. Qualitative data was organized and summarized into thematic areas and framework. The recommendations are that the government (the ministry of health) should develop awareness programs such as health education for the diabetic patients to increase their knowledge and awareness of the disease for effective control. It should come up with policies that can help make the treatment and control of diabetes affordable to all the patients.*

Key Terms: Social Factors, Diabetes, Lifestyle, Economic Status, Culture

## **Introduction**

The global burden of diabetes has been on an upward trend. In 2007 it is estimated that the global burden of diabetes was 246 million people and the international federation of diabetes estimates that this figure is likely to rise to 380 million by the year 2025. At the same time in 2010 the international diabetes

federation estimated that the burden of diabetes stood at 285 million and projected that by 2030 the burden of diabetes was 438 million globally. The rise in diabetes is associated with demographic and social changes that have been taking place globally. These changes include globalization, urbanization aging population and adoption of unhealthy lifestyle such as consumption of unhealthy diet and physical inactivity. Scientists argue that the prevalence of diabetes is higher in developed countries compared to the developing world. However despite the high prevalence of diabetes in developed countries, the majority of the disease burden from diabetes of more than 70 per cent is in the developing world because of their larger populations (Roglic *et al*, 2005).

According to Azevedo & Alla (2008), the cases of diabetes, especially type 2, are rapidly becoming a global problem. Scholars have argued that the cases of diabetes dramatically rose from 30million in 1985 to 230 million in 2006, which was 6 percent of the world population. Eighty per cent of the diabetes cases in the year 2006 were found to be in the developing countries. Scientists estimate that in the next 35 years the global prevalence of diabetes will reach 25 per cent and India was the hardest hit with this problem. Africa was thought to be a continent relatively free of diabetes until the 1990s. In 1994, the continent's prevalence of diabetes stood at 3 million and was then predicted to double or triple by the year 2010. It is approximated that 7.1 million Africans were suffering from diabetes at the end of 2000, and this is expected to increase to 18.6 million by 2030 (Azevedo & Alla, 2008)

Studies have shown that diabetes is influenced by an individual's race and one's ethnic background. Therefore it is important to note that genetic makeup of the individuals influences whether an individual develops diabetes or not. Moreover, environmental factors, diet, lifestyles and residence do influence whether an individual develops diabetes or not. Statistics have shown that in Africa diabetes is more prevalent among the wealthy and the powerful, and this has lead to this condition to be called the "disease of opulence," and remains more pronounced in urban areas where people tend to be less physically active, eating a diet that is rich in saturated fats and refined sugars (Colagiuri, Short & Buckley, 2006).

Previously, the diabetes pandemic consisted mainly of diabetes type 1 disease. However the situation has since changed and type two diabetes has become more predominant. This is mainly due to rapid cultural changes, an aging population, increasing urbanization, dietary lifestyles, and behavioral patterns without prevention and control preparedness. On the other hand there are also other many intrinsic, individual and societal obstacles, such as poor education and illiteracy, low socioeconomic status, and lack of access to health care that make uncertain the translation of diabetes research in Sub-Saharan Africa (Colagiuri, Short & Buckley, 2006).

Diabetic control appears to be a global problem. A study that was conducted in Jordan estimated that the proportion of diabetic patients who did not achieve good diabetic control was 65.1%. Other studies in Kuwait and United Kingdom reported that 66.7% and 69 per cent of the studied population had a good diabetic control respectively. The situation is even worse in Africa where only 15.7 per cent of the study population achieved diabetic control in Johannesburg while a study in Kwazulu-Natal showed only 16 per cent of the respondents achieved diabetic control (Antoniatte, 2011).

The purpose of diabetes control is to keep blood glucose levels as near normal as possible while avoiding acute and chronic complications that are associated with diabetes. Globally, there are three social factors that have been identified to influence diabetic control which include patient factors, health care professional factors and health system factors (Rabi *et al*, 2005). Therefore situations like food intake, emotional stress and changes in physical activity can cause blood glucose to become too low or too high. In

addition, inappropriate nutrition and insufficient physical activity increase the risk of developing the long-term complications of diabetes, especially heart diseases. Keeping blood glucose within a target range requires feedback in the form of self-monitoring of blood glucose (Rabi *et al*, 2005).

Data from the ministry of health in Kenya indicates that of all people living in Africa, an estimated 1.2 million Kenyans live with diabetes and if the trend continues, by 2025 that number is expected to rise to 1.5 million. Diabetes cases are on the rise in Kenya and notably patients are suffering from the disease at a younger age compared to others in the developed world. Kenyans are also at higher risk of developing complications because they report to health facilities when the disease is advanced. Control of diabetes in Kenya has its own problems. The problems include challenges related to diagnosis, care and treatment. There is also lack of knowledge and understanding about the disease among the general population and a perception that diabetes is not as critical as other diseases affecting the country (McFerran, 2008).

A study was conducted in Western Kenya to find out the prevalence of food insecurity in patients with diabetes. In the findings, it was realized that there was high prevalence of food insecurity amongst diabetic patients in the rural resource-constraint settings. Other factors were poor glucose control and challenges in the use and storage of insulin. The study prompted the need of additional research in understanding the effects of enhancing food security which is an important social factor influencing diabetes control (Cheng *et al*, 2013).

Vihiga District hospital in Vihiga County has a clinic that manages patients with chronic illnesses. Diabetes is one of the diseases that are managed in the clinic. Data from the records department of the hospital shows that in the year 2012 a total of 1220 diabetic cases attended the clinic. This number does not include the newly diagnosed cases and the patients admitted in the wards. Therefore this means that there are a large number of people suffering from this problem.

Lack of proper diabetes control may lead to complications which are accelerated by smoking, elevated cholesterol levels, obesity and high blood pressures and lack of regular exercises. These complications may include chronic wounds, comma, infections, heart diseases among others. These complications almost often result in long periods of hospitalization therefore resulting to payment of huge hospital bills and even loss of working hours. This may poses significant economic and even social challenges that may affect the patients' ability to control the disease. Vihiga District hospital has a large number of patients who aim to achieve diabetes control with varying success and failures. Therefore this study sought to examine the social factors that influence diabetes control in Vihiga District Hospital.

### **Research Objectives**

The general objective of this study is to determine the social factors influencing diabetes control among patients in Vihiga District Hospital. The specific objectives of this study include;

1. To determine the implication of economic status in the control of diabetes amongst patients in Vihiga District Hospital.
2. To establish the effects of social lifestyle on the control of diabetes amongst patients in Vihiga District hospital.
3. To establish the effects of the patients cultural beliefs on the control of diabetes in Vihiga District Hospital.
4. To determine the contribution of family support in the control of diabetes in Vihiga District Hospital.

## **Research Hypothesis**

The study sought to approve or disapprove the following hypothesis.

1. Economic status of the diabetes clients does not influence diabetes control among diabetic patients at Vihiga District Hospital
2. The lifestyle of the diabetic patients does not influence diabetes control among diabetic patients at Vihiga District Hospital
3. The patients cultural practices do not influence diabetic control among diabetic patients at Vihiga District Hospital

## **Methodology**

### **Research Design**

The research design that was used in this study was a descriptive study with a view of getting the picture of social factors affecting diabetes control in Vihiga District hospital catchment area. Both qualitative and quantitative data were used.

### **Site Description**

Vihiga District Hospital is located in Vihiga County in Western region of Kenya. The District hospital is found in Mbale town in Vihiga Division. The hospital is located between Kisumu and Kakamega, and only five kilometers north of equator. The hospital serves as a referral center for other health facilities in Vihiga County which include 2 health centers, 30 dispensaries, 2 nursing homes and 19 medical clinics. The services offered in the hospital include Antenatal care, Antiretroviral therapy, family planning, HIV Counseling and testing, Immunizations, curative in-patient and out-patient services and special consultant out-patient clinics.

### **Target Population**

The study focused on the diabetic patients who have been enrolled for care and treatment at the diabetic clinic of the Vihiga District Hospital. The study population is approximated to be 1,220 according to the hospital records. However, there are new patients enrolling and those who are being lost as well. Key informants such as the nutritionists, doctors/clinical officers and nurses attending to the patients in the clinic were interviewed in order to gain an insight on their experiences when handling diabetic patients. Within this clinic there are a total of 7 key informants who include 2 doctors, 2 clinical officers, 2 nurses and 1 nutritionist.

### **Sample Size and Sampling Procedure**

#### **Sampling Procedure**

The sampling technique that was used is purposive sampling. This technique is appropriate in my study because it is recommended on small number of population. I also selected participants for the study on the basis of them having the relevant characteristics for the study. Therefore any patient attending the clinic at the time of data collection with a diagnosis of diabetes was selected for the study. Purposive sampling was also employed in selecting the key informants due to their expertise in the study area.

### **Sample Size**

According to Mugenda & Mugenda (2003), if the research design is a descriptive study then ten percent of the accessible population is enough to make a sample size. The accessible population is 1220 clients. 10 percent of 1220 is 122 cases therefore a sample size is therefore 122 respondents.

### **Data Collection Methods**

The research instruments included interview guides to obtain responses from diabetic patients. Questionnaires were used to obtain responses from key informants and they were tailored to acquire more information from the health professionals at diabetic clinic. The Interview guide and questionnaires was developed with special focus on the research objectives and was administered to research subjects. In addition non-participant observation was done on the study respondents.

### **Description of Data Analysis Procedures**

Qualitative data was organized in tables sorted by respondents and questions. Analysis was carried out for common themes based on patterns, relationships and differences. This coupled with the quantitative analysis, being incorporated into one main study report with the study findings presented in tables and charts.

## **RESULTS**

### **Demographic Information**

According to study findings, out of 120 respondents, 3% were between 18-27 years of age, 8% were between the ages of 28 – 37 years, 13% were between the ages of 38 – 47 years, 43% between the ages of 58 – 67 years and 33% above 67 years of age. This showed that the respondents of all ages were affected by diabetes although the mostly affected age were belonging to the 58-67 years age bracket (52%). The least affected between 18-27 years of age (3%).

### **Economic Status and Diabetes Control**

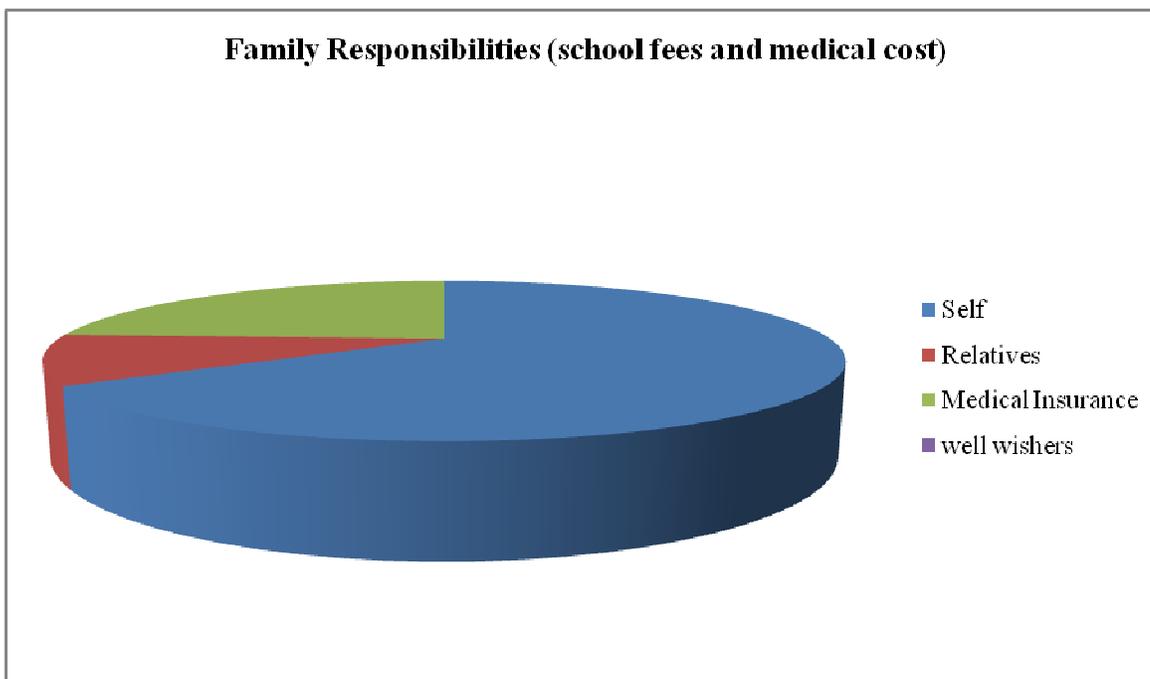
In the first objective, the study sought to determine the influence of economic status in the control of diabetes amongst patients in Vihiga District Hospital. This was highly significant in order to investigate economic aspects influencing diabetes control. Based on this objective, the study focused on level of education, nature of employment, family responsibilities such as school fees and payment for medical expenses.

According to the study findings, out of the 120 respondents, 18% had 1-2 dependants, 55% had between 3-4 dependants 20% had 5-6 dependants and 11% had no dependant. The study sought to find out the level of education and occupation of the respondents that took part in the study. This was crucial in order to determine the economic status of the respondent given that in the today's society, the economic status of a person depends on his or her level of education. The findings showed that out of the 120 respondents that were interviewed, 50% indicated that they had only primary school certificate as 33% had secondary school knowledge. On the other hand, 13% and 4% had college certificate and university degree respectively. The significant percentage 50% of those who had only primary school certificate was striking. As per the

employment factor, 44% of the respondents were self employed mostly peasant farmers, while a significantly 39% were unemployed. On the other hand, a paltry 20% indicated that they were employed.

### **Family responsibilities**

The study sought to find out some of the family responsibilities attached to the respondents that can influence his or her ability to control diabetes. In light of this, the study sought to find out who pays for school fees and medical expenses. In the study findings, out of the 120 respondents that took part, 66% indicated that they met their family obligations such as payment of school fees and medical bills in person. 10% and 24% settled their medical bills and school fees through the help of their relatives and medical insurance respectively.



*Figure 1: Family responsibilities. Source; (Author, 2013)*

### **Lifestyle Effects on Diabetes Control**

The second objective was to establish the effects of social lifestyle on the control of diabetes amongst patients in Vihiga District hospital. In light of this objective, the study focused on smoking and drinking habits of the respondents, their sport activities and diet.

### **Smoking Habits of the Respondents**

The study sought to establish the smoking habits of the respondents and if this lifestyle could influence their diabetes control. Respondents who participated in the study were asked to state whether they smoke, for how long they have been smoking, the frequency they smoke in a day. This was illustrated using table 2.

Table 1: Smoking habits of the respondents

	Frequency	Percentage
<b>Whether they smoke</b>		
Yes	41	35
No	79	65
<b>Duration they have been smoking</b>		
1-5	20	48
6-10	11	28
More than ten years	10	24
<b>Frequencies of smoking</b>		
1-5 times	16	39
6-10 times	17	41
11-15 times	8	20
Above 16 times	Nil	0

The study findings depict that out of 120 respondents, 35% admitted that they smoke while 65% revealed that they do not smoke. Out of the 41 respondents that revealed of smoking, 48% smoke 1-5 times a day, 28% smoke 6-10 times while 24% smoke 11-15 times a day. The findings also reveals that of the 41 respondents who smoked, 48% have been smoking for the last 1-5 years, 28% have been smoking for the past 6-10 years and 24% have been smoking for more than 10 years.

### Drinking Habits of the Respondents

The study sought to establish the drinking habits of the respondents and if this lifestyle could influence their diabetes control. Respondents were asked to state whether they drink, for how long they have been drinking, the frequency they drink in a month. Out of the 51 respondents that revealed of drinking, 62% drink 1-5 times a month, 24% drink 6-10 times while 14% drink 11-15 times a month. This shows that even though some respondents have been diagnosed of diabetic condition, they still drink at least once a month.

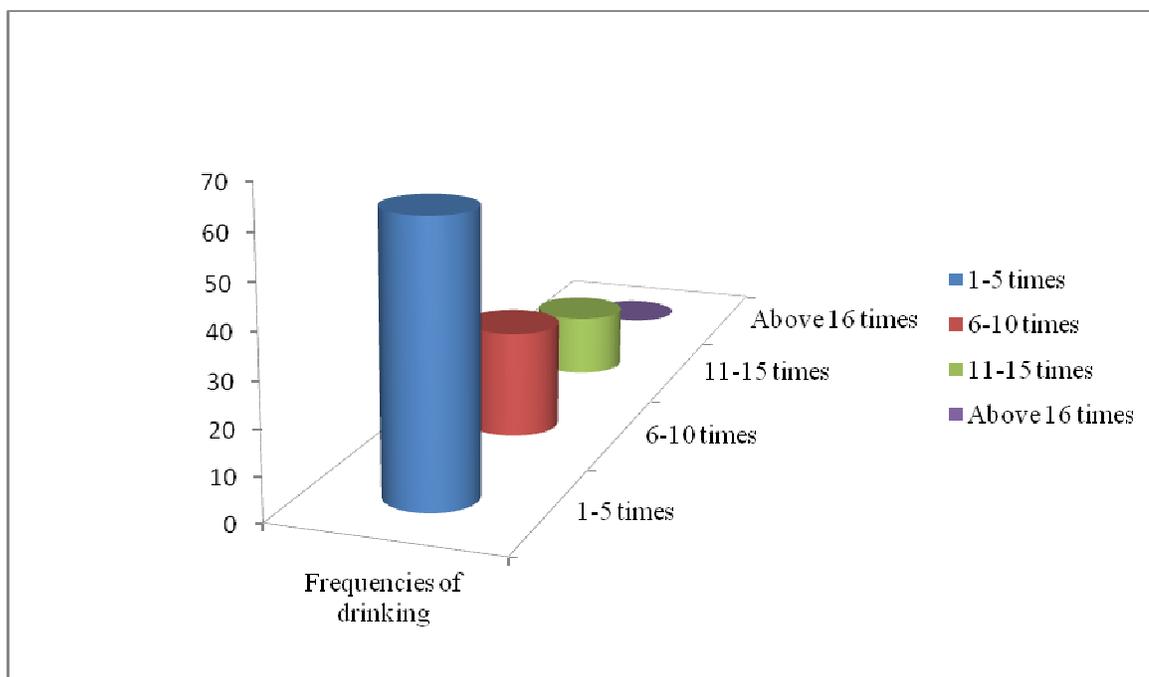


Figure 2: frequency of drinking. Source; (Author, 2013)

The findings also reveals that of the 51 respondents who took alcohol, 61% have been drinking for the last 1-5 years, 25% have been drinking for the past 6-10 years and 14% have been drinking for more than 10 years.

### Fitness Activities

The study sought to examine whether the respondents engage in any fitness activity. The respondents were asked to state whether they participate in any such activity and the frequency they participate in activity. This is illustrated using table 3.

Table 2: Fitness activities

	Frequency	Percentage
<b>Whether they participate</b>		
Yes	36	30
No	84	70
<b>Frequency of participation</b>		
Every day	Nil	
Twice a week	12	33
Once a week	11	31
Once a month	13	36

The study findings depict that out of the 120 respondents that were interviewed, 30% confirmed that they took part in sport activity, while 70 indicated that they don't engage in sport activity. Based on the frequency of participation, 33% took part in sport activity twice a week, 31% participated once a week and 36% took part in such activity once a month.

### Cultural Effects on Diabetes Control

The third objective was to find out effects of patient cultural beliefs on the control of diabetes amongst patients in Vihiga District hospital. This was highly imperative in order to investigate the role of cultural beliefs and practices influencing diabetes control. In light of this objective, the study focused on religion, perception about the causes of the disease and use of supplementary treatment other than hospital medication.

### Religion

The study sought to examine whether the religion of the respondents could influence their control on diabetes. To achieve this, respondents who took part in the study were asked to state their religion, and how their religious culture affects the control of the diabetes. The research findings show that out of the 120 respondents that took part in the study, 74% were Christians while 10% indicated that they were Muslims. 16% believed in African traditional religion. When investigating some of the religious culture preventing diabetes disease control, out of the 120 respondents that were interviewed, 86% indicated that their engagement in fasting to fulfill their religious obligation was a setback for the control of the disease. 81% confirmed that restriction of certain foods as a result of their religious doctrine.

### Causes of the disease

The study sought to determine the perception and belief of the patients on the causes of diabetes and how this would influence his or her control on the diabetes disease. The findings of the study revealed that out of the 120 respondents that were interviewed, 66% indicated that they believed diabetes was a disease of the rich, while 33% linked the disease to witchcraft. On the other hand, 56% indicated that diabetic disease is a hereditary disease.

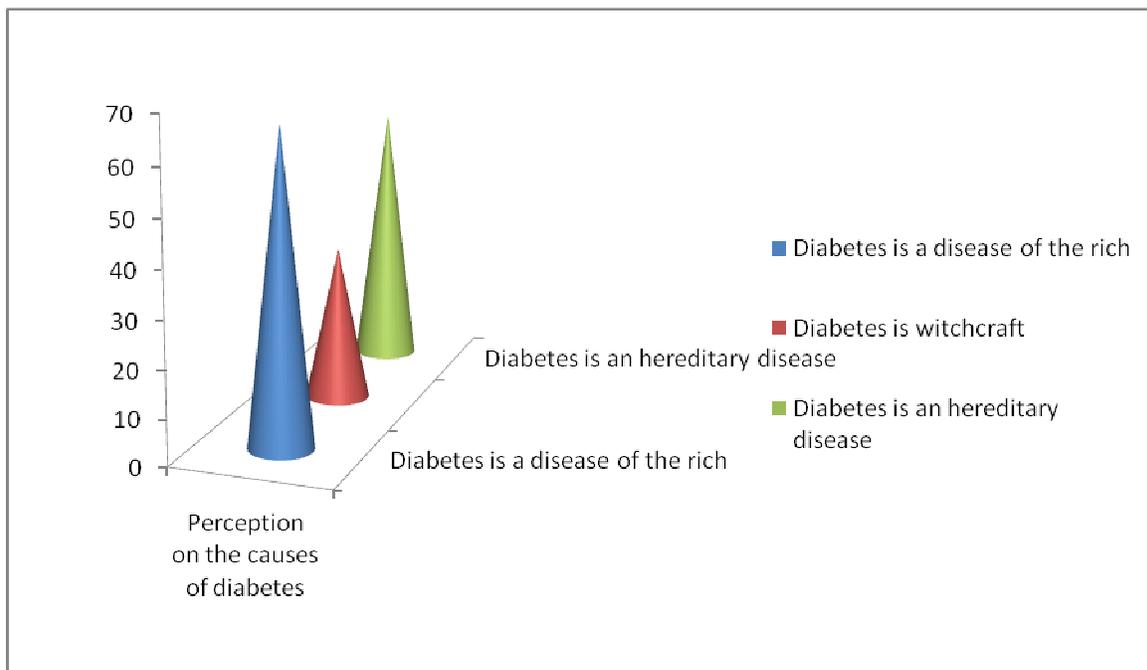


Figure 4: perception of diabetes causes. Source; (Author, 2013)

### Use of Supplementary Medication

The study sought to investigate whether the patients use other forms of treatment other than the hospital medication. This was necessary in order to establish patients' cultural beliefs on control of diabetes among the patients. The research findings show that out of 120 respondents that were interviewed, 32.5% indicated that they use supplementary treatment in controlling diabetes disease, while 67.5% indicated that they don't use any supplementary treatment. Out of the 39 respondents that use supplementary treatment method, 43.5% use herbal to control diabetes, 51.4% believe in prayers to control the disease and 5.1% consulted witchdoctors to control the disease.

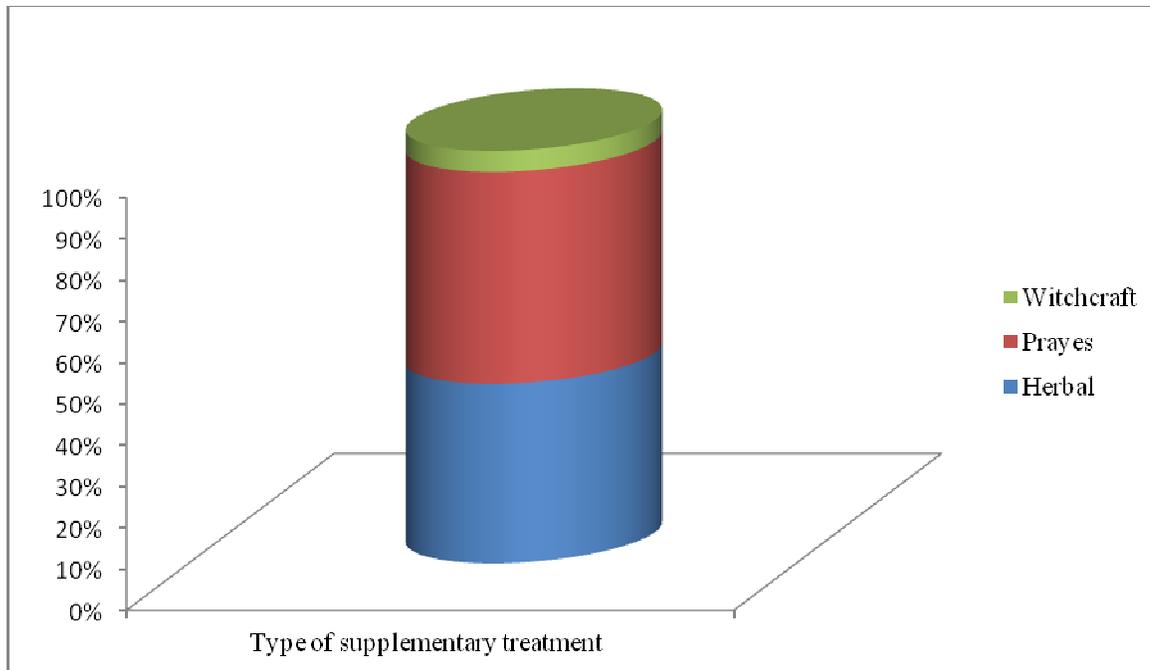


Figure 6: supplementary treatments. Source; (Author, 2013)

### Effects of Diabetes

The study sought to investigate whether the patients are familiar with the effects of diabetes. Investigating this was helpful in order to establish the cultural perception and attitude towards the diabetes disease. The study findings showed that out of the 120 respondents that took part in the study, 77.5% indicated that they are familiar with the effects of diabetes. However, only 22.5% indicated that they are not familiar with the effects of diabetes disease.

### Family influence and Diabetes Control

The fourth objective was to determine the contribution of family on the control of diabetes in Vihiga District hospital. This was highly crucial in order to investigate social factors influencing diabetes control. Based on this objective, the study focused on family support, emotional support and improved relations.

### Family Support

The study sought to examine whether the family and emotional support of the respondents could influence his or her control on diabetes. To achieve this, respondents who took part in the study were asked to state whether they agree with the observation or strongly disagree.

Table 4 shows the response

*Table 4: Family support*

	Frequency	Percentage
<b>Family support is significant in controlling the diabetes disease</b>		
Agree	118	98
Disagree	2	2
<b>Emotional support</b>		
Agree	119	99
Disagree	1	1

In the study findings, out of the 120 respondents that took part in the study, 98% strongly agreed that family support helps significantly on the control of diabetes disease. However, a paltry 2% indicated that they strongly disagreed with the statement. Based on the emotional support, of the 120 respondents that were interviewed, 99% strongly agreed that emotional support offered by the family members to the diabetic patient helped significantly in controlling and managing the disease by the patient. However, only 1(1%) strongly disagreed with the argument.

### Patients' Observation on Family Support and Diabetes Control

The study sought to check whether the patients agree or disagree with some of the statements that reflect the extent of family support in controlling the diabetes disease. Table 5 shows how they responded.

*Table 5: Patients' Observation on Family Support*

statement	Frequencies and valid percentage		Total
	Agree	Disagree	
My family listens carefully to what I talk about my condition	97	3	100
	116	4	120
My family ensures that I participate in exercise	87	13	100
	104	16	120
My family buys or cooks food for me that is especially recommended for my condition	84	16	100
	101	19	120
My family ensures that I go for regular medical checkups.	81	19	100
	97	23	120

From the study findings, out of the 120 respondents, 97% agreed that their families listened carefully to what they said about their condition, while only 4% confirmed otherwise. Besides, of the 120 respondents that took part in the study, 87% agreed that their families ensured that they participated in exercise while 13% disagreed to the statement. On the other hand, 84% agreed that their families bought and cooked food for them that was especially recommended for their condition, while 16% disagreed with this statement. In addition, 81% agreed that their families ensured that they went for regular medical checkups, while 19% disagreed.

## DISCUSSION

### ***Economic Status and Diabetes Control***

In the first objective, the study sought to determine the influence of economic status in the control of diabetes amongst patients in Vihiga District Hospital. Based on this, the study focused on respondents' age, marital status and number of dependants, level of education, nature of employment, family responsibilities such as school fees and payment for medical expenses. It was fundamental to establish the respondents' age, marital status and number of dependants in order to comprehend the responsibilities that come with that marital status, age and number of dependants and determines if there is a link between these responsibilities and the ability to meet medical obligations.

The study findings showed that the respondents of all ages were victims of diabetes although the mostly affected age were belonging to the 58-67 years age bracket (52%) and the least affected between 18-27 years of age (3%). Of the 120 interviewees in the study, findings revealed that majority of the respondents affected by diabetes are either widowed or married, who are the main stream of the society.

The study sought to determine the number of dependent children that respondents had. This was critical in establishing the responsibilities of the diabetes patients and how this influences their socio-economic status and hence management of the diabetic disease. Out of the 120 respondents, majority had dependants. The findings were subjected to further statistical analysis which revealed that there is an average of 3 dependent children per study respondent with a maximum of up to 6 children. This implies that the number of dependent children in the respondents' households is large. This is consistent with findings by Banerjee and Duflo (2006) that a family living in poverty tends to be rather large, at least by the standards of today's rich countries a scenario that can affect improvement in the socio-economic status of the respondents.

The study sought to find out the level of education and occupation of the respondents that took part in the study. This was crucial in order to determine the economic status, in tandem with modern trends that financial standing depends on his or her level of education. The respondents were asked to state the highest level of education that they had attained and what they do daily to earn a living. Out of the 120 respondents, 50% indicated that they had only primary school certificate whereas 33% had secondary school knowledge. A small number had college certificates and university degrees. The significant percentage of those who had only primary school certificate was striking.

According to the findings, majority (44%) of the respondents were self employed mostly peasant farmers, while a significantly (39%) were unemployed. On the other hand, a paltry (17%) indicated that they were employed, formally. This finding underscores the fact that most of the diabetes patients are self employed engaged in subsistence farming as their source of livelihood. The findings also underline the fact that level of education has a great effect on the type of occupation and income and as expected therefore, the primary income of respondents of this study tended to come mainly from agriculture and self employment. These responses underscore the findings of Marmot and Wilkinson (1999) in his study of *the social*

*determinant of health*. According to his findings, meager economic resources pose a great challenge to managing chronic diseases such as diabetes among the patients.

*“Sometimes I cannot access proper medication due to inadequate finance to meet the medical bills”* offered one of the patients when asked some of the major challenges in controlling and managing diabetic disease.

The study also sought to find out some of the family responsibilities attached to the respondents that can influence their ability to control diabetes. The respondents were therefore asked to state who settles the school fees of their dependants and medical bills. The findings revealed that majority of the respondents met their family expenses in person alongside their diabetic control medical expenses. This finding shows that majority of the patients interviewed, have to shoulder the medical expenses by themselves alongside other family responsibilities such as school fees. This implies that out of their meager income, they have to balance between meeting their medical bills and providing for the family. This response justifies the findings made by Mc Ferran (2008) in his study of *the obstacles to diabetic care in Kenya*. According to his findings, insufficient economic resources amidst enormous family responsibility hamper the success control of the diabetic among the patients.

*“Some of the patients are overburdened by the family responsibilities alongside meager income, hence they find it difficult to access proper medical care”* observed one of the health officers of Vihiga District Hospital

### ***Lifestyle Effects on Diabetes Control***

The second objective was to establish the effects of social lifestyle on the control of diabetes amongst patients in Vihiga District hospital. This was highly imperative in order to investigate habits that impact diabetes control. In light of this objective, the study focused on smoking and drinking habits of the respondents, their sport activities and the type of food they eat.

The study sought to establish the smoking habits of the respondents and if this lifestyle could influence their diabetes control. To achieve this, respondents who participated in the study were asked to state whether they smoke, for how long they have been smoking, the frequency they smoke in a day. Out of 120 respondents, 35% admitted that they smoke while 65% revealed that they do not smoke. However, the number of those who smoke while nursing their diabetic condition is still alarmingly high. This shows that even though some respondents have been diagnosed of diabetic condition, they still smoke at least once a day. The findings also show that the smoking diabetic respondents have been smoking for a long time of more than one year. This is detrimental for the control of the disease as according to Ayieko (2011), modification of lifestyle risk factors like exercise, diet, alcoholism and smoking is important in management of diabetes.

With respect to drinking as a life style, the study sought to establish the drinking habits of the respondents and if this lifestyle could influence their diabetes control. To achieve this, respondents who participated in the study were asked to state whether they drink, for how long they have been drinking, the frequency they drink in a day. Out of 120 respondents, 43% admitted that they drink while 57% revealed that they do not drink. However, the number of those who drink while nursing their diabetic condition is striking. A majority of the respondents who take alcohol do it at least every day. This shows that even though some respondents have been diagnosed of diabetic condition, they still drink at least once a day. The findings also reveal that the drinking diabetic respondents have been drinking for a long time of more than one year which is harmful for the control of the disease.

*“It is extremely difficult for an alcoholic diabetic patient to successfully manage his or her condition as drinking alcohol particularly consuming large amount worsen the situation”* explains one of the health personnel of the Vihiga district hospital, when asked how alcohol influences diabetic management and control among the patient.

Based on the fitness activity as a lifestyle, the study sought to examine whether the respondents engage in any sport activity. Respondents were therefore asked to state whether they participate in any sport activity and the frequency they participate in such activity. Out of the 120 respondents that were interviewed, only 36 confirmed that they take part in suchlike activity, while 70% indicated that they don't engage in the same. Based on the frequency of participation, majority of the study participants take part in fitness activity once a month. This response shows that few respondents appreciate such practice and for the few that participate in these activities, do so not frequently. However, it is largely agreed by many studies that, physical activity is another important part diabetes management plan. When one exercises, his/her muscles use sugar (glucose) for energy. Regular physical activity also improves ones body's response to insulin. These factors work together to lower the blood sugar level. The more strenuous the workout, the longer the effect lasts. But even light activities such as housework, gardening or walking for extended periods can lower the blood sugar level (MFMER, 2011).

### **Culture Effects on Diabetes Control**

The third objective was to find out effects of patient cultural beliefs on the control of diabetes amongst patients in Vihiga District hospital. In light of this objective, the study focused on religion, causes of the disease and the perception about the disease.

Concerning religion, out of the 120 respondents that took part in the study, 74% were Christians while 10% indicated that they were Muslims. 16% of the respondents indicated that they believe in African traditional religion. These findings show that majority 74% of the respondents were Christians, who practice Christianity doctrine to the latter. When investigating some of the religious culture preventing diabetes disease control, out of the 120 respondents that were interviewed, 86% indicated that their engagement in fasting to fulfill their religious faith is a setback for the control of the disease. On the other hand, 81% confirmed that restriction of certain foods as a result of their religious doctrine as one of the major challenges in controlling the diabetes disease. From the findings, majority of the respondents confirmed that certain religious beliefs such as fasting and restriction on eating certain foods can influence the management plan of diabetes.

*“Sometimes the doctor advices me to take some foods to increase amount of insulin in my body but because some of these foods are not taken by my religion, I feel challenged”* offered one of the diabetic patient of Vihiga District Hospital.

On the other hand, the restriction of access to insulin also results in complications such as amputations, blindness and even death (Beran, Yudkin& De Courten, 2005). The study also sought to determine the perception and belief of the patients on the causes of diabetes and how this would influence his or her control on the diabetes disease. To achieve this, respondents who took part in the study were asked to state their perception on the causes of diabetes.

Out of the 120 respondents that were interviewed, 66% indicated that they believe diabetes as a disease of the rich, while 33% linked the disease to witch-craft. On the other hand, 56% indicated that diabetic disease is a hereditary disease. This response reveals lack of information on the causes of diabetes among the patients

and this can affect greatly its management as the patients might ignore some of the advices and prescription given by the health officer as a result of little or lack of information about the disease.

Based on the cultural perception and attitude of the patient on diabetes, the study sought to investigate whether the patients use other forms of treatment other than the hospital medication. This was necessary in order to establish patients' cultural beliefs on control of diabetes among the patients. To achieve this, respondents who took part in the study were asked to state either *Yes* or *No* on whether they use supplementary treatment and indicate if *yes*, on which type of supplementary treatment they are engaged in. Out of 120 respondents that were interviewed, 32.5% indicated that they use supplementary treatment in controlling diabetes disease, while 67.5% indicated that they don't use any supplementary treatment method, other than hospital treatment. The study findings also show that the respondents who use supplementary medication mostly use herbal treatment and prayers. A few of them also consult witch doctors to control the disease. Even though the number of those who consult other supplementary methods of treatment is minority compared to those that engage only in hospital treatment, this percentage is still significant attest to insufficient health education on diabetes control and management.

*"Sometimes I rely on herbs or prayers especially when I lack funds for hospital treatment"* offered on of the patients when asked whether and why he uses other supplementary control of diabetes.

The study similarly sought to investigate whether the patients are familiar with the effects of diabetes. Investigating this was helpful in order to establish the cultural perception and attitude towards the diabetes disease. To achieve this, patients were asked to indicate either *yes* or *no* on whether they are familiar with the effects of the diabetes disease. Out of the 120 respondents that took part in the study, 77.5% indicated that they are familiar with the effects of diabetes. However, only 22.5% indicated that they are not familiar with the effects of diabetes disease. Based on the findings, it is evident that even though majority of the patients are familiar with the effects of diabetes, there are some patients who don't understand the effects of the disease, this indicates that there is still insufficient knowledge and information on the disease among the patients.

### **Family Support and Diabetes Control**

The fourth objective was to determine the contribution of family support on the control of diabetes in Vihiga District hospital. This was highly crucial in order to investigate social factors influencing diabetes control. Based on this objective, the study focused on family support, emotional support and improved relations.

Concerning the family support, the study sought to examine whether the family and emotional support of the respondents could influence his or her control on diabetes. To achieve this, respondents who took part in the study were asked to state whether they agree with the observation or strongly disagree

Out of the 120 respondents that took part in the study, majority strongly agreed that family support helps significantly on the control of diabetes disease. However, a paltry 2% indicated that they strongly disagree with the statement. Based on the emotional support, of the 120 respondents that were interviewed, majority strongly agreed that emotional support offered by the family members to the diabetic patient helps significantly in controlling and managing the disease by the patient. However, only 1% strongly disagreed with the argument. This response shows that majority of the patients' value family and emotional support for optimal diabetic management. According to Solowiejczyk (2004) studies have been done and shown that the family plays a big role in the diabetes management behavior and metabolic control. This is also echoed by Fisher, (2006) in his study that family and couple relationships during the adult years are as important for

diabetes management and outcomes as they are for individuals with diabetes who are children, adolescents, or elderly

## **Conclusions**

The study was based on three research hypothesis which were; economic status of the diabetic clients does not influence diabetic control among the patients, the lifestyle of the diabetic patients does not influence diabetic control among the patients and the patients cultural practices do not influence diabetic control among the patients.

### **Economic status and diabetes control**

According to the research findings, the study disapproved the first hypothesis. This is justified by the fact that of all the respondents that took part in the study, majority agreed that economic challenges as a result of meager income alongside family responsibilities do not provide a favorable condition to the patient to manage and control diabetes. This is because, family responsibilities such as school fees bills can strain the income, thereby leaving the patient with inadequate financial resources to meet his or her medical bills and access medical proper care.

### **Patients' lifestyle and diabetes control**

The second hypothesis which is a null hypothesis was also disapproved by the study findings. This is because, the majority of the respondents indicated that risky lifestyle such as smoking, alcohol consumption and lack of physical exercise is a major drawback for successful control of the diabetes among the patients.

### **Cultural beliefs and diabetes control**

The third and last hypothesis which was also a null hypothesis was also disapproved by the study. This is verified by the fact that the majority of the respondents interviewed admitted that certain cultural practices such as controversial religious beliefs, associating the diabetic with witchcraft or attributing it as a preserve for the rich similarly interferes with the control and management of the disease. Summarily, the study was successful and all the objectives were studied.

## **Recommendations**

Having carried out a successful study, the following recommendations were arrived at;

### **Recommendation for government and policy makers**

Evidently there is still insufficient knowledge on diabetes disease among the patients and this makes the proper diabetes control and management to be difficult. The government through the ministry of health should therefore, develop awareness programs such as health education among the diabetic patients to increase their knowledge and awareness of the disease for effective control. The study also found out that one of the major challenges facing the diabetes patients is socio-economic drawbacks. The government should come up with policies that can help make the treatment and control of diabetes to be affordable comfortably among the patients. These policies can include; subsidies, free medical consultations or medical facilities.

Non Governmental Organizations should support the government in implementation of programs that support health education to the patients and the community. They should also support the community in terms of economic empowerment which can go a long way in the management and control of diabetes

The community should be educated through barazas to increase their knowledge on diabetes and emphasis should be put on the importance of hospital treatment. Appropriate information materials should be developed to make the community aware of associated risk factors such as obesity and physical inactivity, tobacco use, alcohol use and inappropriate nutrition.

### **Recommendations for Further Research**

Although the study tackled, the effect of lifestyle to diabetic management and control among the patients, lifestyle modification was not exhaustively handled and therefore its study needs to be emphasized in diabetes management. This implies that there is call for a population-based study on the prevalence of lifestyle risk factors for diabetes. There is also need for a research to be done to ascertain the effect of lifestyle on diabetes control; more so, no study has been done in Western part of Kenya to assess the effect of lifestyle in diabetes management.

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