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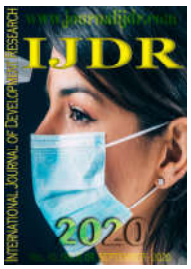


RESEARCH ARTICLE OPEN ACCESS

# PATIENT'S KNOWLEDGE AND SATISFACTION ON DIABETIC MEDICAL CONSULTATION SERVICES AT BUNGOMA COUNTY REFERRAL HOSPITAL, WESTERN KENYA

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**ABSTRACT**

Quality of medical consultation services contributes to patient's satisfaction with medical consultation services. For improvement of consultancy services, there is a need to regularly evaluate knowledge and satisfaction of patients. However, there are very few studies evaluating both quality and quantity of consultation services especially on non-communicable diseases. This study therefore employed cross-sectional design to identify diabetic medical consultation services and assessed the knowledge and satisfaction of diabetic outpatients. The study involved 120 participants at a diabetic clinic within Bungoma county referral hospital, Kenya.Purposive sampling method was used to recruit participants, semi-structured questionnaire and key informant interviews were used to collect both quantitative and qualitative data from participants and health care providers respectively.The results shows that diabetes glycaemic screening88.3% (n=106)is the most available service. However, 80.8% (n= 97) indicated that the least available services was management of diabetic complications.Majority of the respondents, 86.5% (n= 104) had knowledge on diabetic consultation services but only 60% (n=72) were satisfied. The study shows adequate knowledge about the available diabetic medical consultation services but due to limited services, the satisfaction is low. Perhaps, availing other services on the management of diabetic complication can improve the satisfaction on medical consultation services.



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## INTRODUCTION

Diabetes is a common non-communicable disease of public health concern in Kenya, as well as world-wide. It accounts for over 50% of the total overall attendance in medical outpatient clinics with the greatest burden in the low-and middle-income countries (Mario Azavedo, 2008). Kenya has a heavy disease burden of diabetes among people aged 20–79 years and it accounts for 2% of deaths (Mutwai'iwa, 2008). The burden is thought to be as result of Change in lifestyles and lack of improvement in healthcare especially in low-middle income countries. The World Health Organization (WHO) predicts a rise to 4.5% by 2025 (Noncommunicable diseases, 2018) the increase in Kenya could be due to change in socioeconomic growth resulting into lifestyle transition in rural areas (Jones, 2013). It is however worth noting that diabetes is a chronic disease, requiring a multipronged approach for its management.

Comprehensive and satisfactory consultation service is important for patient satisfaction; a high level of patient knowledge is required since most of the available diabetic services for optimal glycemic control and prevention of complications depend on adequate patient knowledge of diabetes (Mario Azavedo, 2008).Thus, the objective of this study was to assess the available diabetic medical consultation services and diabetic knowledge among patients in relation to their satisfaction in Bungoma county referral hospital to inform improvement of quality and quantity of diabetic consultation services.

## METHODS

**Study site:** This study was conducted at Bungoma County referral hospital in Bungoma County. The county is positioned at 0.5695° N, 34.5584° Ewith an approximate area of 2,069KM$^2$ and an estimated total population of 1.3 million

people. The hospital is also served by ten sub county hospitals and 133 health centres with an estimated catchment population of 537,145.The county economy is largely supported by agricultural activities and population is mainly drawn from Bukusu tribe with major health issues being communicable diseases such as malaria, TB, Pneumonia and diarrhoeal diseases while none communicable diseases being hypertension, diabetes and accidents (Arap, 2017)

**Study Design:** A descriptive cross-sectional research design involving both qualitative and quantitative approaches was used in this study. The data collection tools were semi-structured questionnaire for participants and Key informant interview guide forth healthcare providers who were directly involved in the provision of diabetic medical consultation services in the diabetic clinic.

**Study Participants:** The study involved 120 participants between 14-79 years attending the Bungoma diabetic clinic. Other study participants were health care providers at the diabetic clinic. The tools were administered by trained research assistants in a language best understood by respondents English, Kiswahili or Luhya local language.

**Data analyses and approvals:** Data was entered into excel-spreadsheet and analyzed using descriptive statistics. This study was approved by Jaramogi Oginga Odinga University of Science and Technology institutional ethics review board, further, all the study participants gave a written consent to participate in the study.

## RESULTS

**Demographic Characteristics of the Respondents:** The total number of respondents was 120 where both male and female were equally represented 50% (60). Majority of the respondents 43.4% (n= 52) were aged between 41 and 50 years and 40% (n= 48) of respondents having attained secondary education as the highest educational qualifications. Majority of the respondents were single 73.3% (n = 89) less than half of the respondents 43.4% (n=52) were famers with 33.3% (n=40) reporting to be self-employed while 13.3% (n=16) (formal employment. Christianity was the dominant religion with 86.5% (n= 104).

**Diabetic medical consultation services:** The results indicated that Diabetes screening is the most available service with 88.3% (n= 106) of the respondents receiving the service followed by diabetic education with 86.5% (n=104) receiving the service. Diabetes diagnostic testing is available with 85.8% (n=103) accessing the service. Management of diabetic complication is the least available service with 80.8% (n=97) of the respondents reporting to have received the service (Table 1). Key informants responses regarding diabetic medical consultation services being offered.

One KI echoed the sentiments of many participants indicating that most of the diabetic medical consultation services were available which include diabetes screening, laboratory diagnostic testing *"We offer diabetes screening to all outpatient clients, laboratory tests to confirm, dietary counseling with nutrition component, and diabetic management with management of complications as well as education on self-care."* (KI IV)

**Patient's source of information about diabetes:** The findings indicated that 72 (60%) of the respondents cited doctor, nurse as their source of information while 12 (10%) cited family member, and guardian, friend, fellow patient radio and television respectively as the source of information (Table 2). Key informant responses on source of patient knowledge and what is taught at the clinic on diabetes, most of the KI agreed that doctors and nurses are the major source of patient and client knowledge and they are taught the risks and contributing factors to diabetes as well as care and management of diabetes as, indicated by the KI : *"In this clinic, doctors and nurses are the ones who normally teach and give advice on risks and contributing factors to diabetes give advice on diet as well as care and management including avoidance of complications"* (KI I) *"doctors usually teach clients on how other underlying health conditions influence diabetes and how to care and manage them to avoid diabetes complications"*(KI III)

**Knowledge about Factors Contributing to Diabetes:** Majority of the respondents were knowledgeable on factors contributing to diabetes, however half of the respondents were not sure if eating too much sugar and other sweet foods predispose one to diabetes. There is a difference in diet intake between diabetic and non-diabetic people 66.6% (n=80), similarly there is difference on the way diabetic food is prepared and is as important as the foods to eat. The study findings revealed that 72 (60%) of the respondent agreed that diabetes has an influence on blood circulation (blood pressure).Similarly on diabetes care and treatment the results showed that 76.7% (n=92) of the respondents indicated that they were aware of effect of untreated high blood pressure, with 57.7 %( n= 69) of the respondents having knowledge on how to control blood sugar in the body (Table3).

Key informants responses concerning diabetic knowledge among patients attending the clinic most of the responses were consistent with the participants where most of the participants had knowledge on contributing factors to diabetes as voiced by KI: *"..most patients understand the factors contributing to diabetes and what is expected of them in controlling their blood sugars as well as maintaining a healthy lifestyle, they are able to explain themselves well and ask questions* (KI II) majority of the patients are aware on how one gets diabetes, how diet influences diabetes as well as effects of untreated diabetes on the body. Almost all the patients know the signs and symptoms associated to diabetes as well as care and management of these symptoms as pointed out by one KI "*Majority of clients are aware on how to take care of themselves, how and when to their blood sugars, how to identify symptoms of low and high blood glucose level and when to seek care, most can tell the medication used in controlling blood glucose as well as self-care*" (KI IV).

## DISCUSSION

Finding from this study illuminates on available diabetic medical consultation services in Bungoma county referral hospital. Most of the respondents were largely satisfied with the services offered and agreed that most consultation services were available and were knowledgeable regarding diabetes care and management.

**Table 1. Diabetic medical consultation services**

| Diabetic consultation services offered at the clinic | Yes N (%) | NO N (%) | Not sure N(%_) |
|---|---|---|---|
| Diabetes screening | 106(88.3) | 5 (4.1) | 9(7.5) |
| Diabetes diagnostic testing | 103(85.8) | 15(12.5) | 2(1.6) |
| Management of diabetic complications | 97(80.8) | 20(16.6) | 3(2.5) |
| Diabetic education | 104 (86.5) | 4(3.3) | 12(10) |

**Table 2. Patient's source of information about diabetes**

| Source | N (%) |
|---|---|
| My doctor, nurse | 72(60%) |
| My family member, guardian | 12(10%) |
| A friend | 12(10%) |
| Fellow patient | 12(10%) |
| Radio, television | 12(10%) |

**Table 3. Knowledge about Factors Contributing to Diabetes**

| Factors | Yes N (%) | No N (%) | Not sure N (%) |
|---|---|---|---|
| Can any person get Diabetes | 64(53.3) | 16(13.3) | 40(33.3) |
| Can child suffer from diabetes if any parent suffers from it | 84(70) | 12(10) | 24(20) |
| Eating too much sugar and other sweet foods predispose to diabetes | 40(36.7) | 16(13.3) | 60(50.0) |
| Awareness on the effect of untreated high blood pressure | 92(76.7) | - | 28(23.3) |
| Differences between diet of diabetic and non-diabetic people | 80(66.6) | 20(16.6) | 20(16.7) |
| Awareness on the preparation of Diabetic diet | 76(63.3) | 8(6.7) | 36(30) |
| Knowledge on how to control blood Sugar | 68(56.7) | 8(6.3) | 44(36.7) |
| Role of Exercise in controlling Diabetes | 104(86.7) | 4(3.3) | 12(10) |
| Influence of diabetic condition on blood pressure | 72(60) | - | 48(40) |
| Knowledge about signs of high/low blood sugar | 116(96.7) | 4(3.3) | - |
| Knowledge on how often to have blood sugar cheeked | 72(60) | - | 48(40) |
| Knowledge on how often to have Urine Ketone Test performed | 44(36.7) | - | 67(63.3) |

Satisfactory level especially for screening of diabetics in the outpatient clinic was at 88.3% while diabetic education, diagnostic and management was at 86%, 85% and 80%respectively which according to the standards of care and management of diabetes does not meet the expected standard of over 95% for screening ,diagnostic and management of diabetes. Doctor, Nurse-driven education formed the biggest source of diabetic information for patients. However, mass media and print media was less frequently used as a source of knowledge , it was found that only 104 (86.7 %,) had a previous diabetes education while 16 (13.3%) did not have previous diabetes education which is a none satisfactory level meaning that diabetes education levels need to be improved among the population. In early 1990s nurses were the main educators on matters health and from their education forums to patients which led to great strides in improvement of patient knowledge but was not satisfactory since not all members of the community come to hospital, they only come to hospital when sick (Maez, Erickson, & Naumuk, 2014).

Changing the tradition of the models and modes of diabetes education other modes of knowledge transmission should be explored this is according to the finding of Stewart in his study dubbed rethinking the models and modes of diabetes education (Dumnn, 2015). In the current study, half of the respondents were not sure on the statement that eating too much sugar and other sweet foods predispose one to diabetes, 44 (36.7%) though agreed that eating too much sugar and other sweet foods predispose one to diabetes and 16 (13.3%) disagreed. This is a matter of concern because if diabetic patients are not sure about the most important predisposing factor then it's possible to conclude that diabetic patients have poor knowledge about the predisposing factors of diabetes and people need more knowledge to form a resource base for improving their own health and that of the society (Mutwai'iwa, 2008). The current study results regarding diabetes knowledge of the participants are similar to a study done in South Africa which also reflected poor knowledge and awareness about diabetes in the population (Rampersad, 2019). The inability of a good number 20 (16.7%) of diabetic patients to differentiate diabetic food from non-diabetic diet is a major concern in the control and management of diabetes since diet is central to glycemic control , emphasis should be given to good dietary practices as it is a determinant of both glycemic control and weight management .The low numbers of diabetics slightly more than half 69 (57.7%) of the respondents being aware of diabetic management and having knowledge of blood sugar control measures is a worrying trend. (JCN. Mbaya, 2006). The findings also showed that 44 (36.7%) of the respondents were not sure if diabetes has a cure which also indicates a gap in knowledge among the diabetics the finding was consistent with a studies done in south Africa, Mali, Zambia, Nigeria and Kenya urban areas where only 46% of the participants had adequate knowledge and followed a diet plan regularly as directed by the WHO for glycemic control and knew how to control blood glucose.(Mario Azavedo, 2008). Regarding the knowledge on how often one should check their blood sugar, 72 (60%) of the respondents agreed that they had knowledge and 58 (48%) indicated that they did not have knowledge on how often one should check their blood sugar. This forms another area of knowledge gap given that the frequency with which one should monitor their blood sugar ensures proper glycemic control and reduces the chances of diabetes complications. Almost similar findings were seen in studies done in Boston Massachusetts as well as in Lagos Nigeria demonstrated that patient knowledge on how often they should check their blood glycemic level contributes to effectiveness of the treatment regimen for glycemic control.(julie R . Palmer, 2008). While assessing the influence

of Diabetes on body parts, systems and functions the study findings revealed that 72 (60%) of the respondent agreed that diabetes has an influence on blood circulation (blood pressure) while 48 (40%) were not sure. These results regarding the knowledge on complications were different from the results obtained by Mehta where the findings showed that 82% of their study subjects had knowledge about the disease and its complications a higher knowledge level among respondents compared to this study.(cyrus R. Mehta, 2017).

This inadequate knowledge among diabetic patients indicates that education to patients regarding their disease by their primary health care provider's; doctors, clinical officers and nurses is not adequate and one of the reasons for the lack of providing adequate education could be that clinic staff are themselves not aware or not motivated to educate the public. Similarly, healthcare providers failure in this part may be due to the large numbers of patients that they see in their daily practice and thus the lack of time to educate or do not prioritize client education. Education through mass media can also bring about change. Although respondents and key informants (KIs) were well represented ranging from clinicians, nurses and counselors, it is impossible to capture all perspectives and therefore some issues may have been missed.

However, findings from clients / patients and health care providers; could provide greater confidence in the validity of the findings with purposive sampling approach involved in selecting key informants specifically from the diabetic medical consultation clinic with providers familiar with the target groups. This resulted in optimizing of information obtained . However, it is also possible that the KI would be biased for fear of victimization for which they were assured that the study was purely for academic reasons.

**Conclusion**

As evidenced by the study, it was noted that not all the diabetic medical consultation services were available. The respondents demonstrated an inadequate screening rate with regards to the expected standards for adequate diagnosis and management.

Although the knowledge level among the respondents was above average access to accurate and reliable diabetic information is still low since slightly more than half of the respondents got information from doctors and nurses.

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