ADDIS ABABA UNIVERSITY SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF ECONOMIC BURDEN OF DIABETES MELLITUS TO DIABETIC PATIENTS AND THEIR FAMILIES ATTENDING HEALTH FACILITIES IN A.A Ethiopia, 2015.

By

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DECLARATION

I declare that the thesis "ASSESSMENT OF ECONOMIC BURDEN OF DIABETES MELLITUS TO DIABETIC PATIENTS AND THEIR FAMILIES IN A.A CITY ADMINISTRATION, 2015" is my original work, it has not been presented for degree in this and another university. All the sources of material used for this thesis have been fully acknowledge.

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This thesis work has been summated for the examination with my approval as a university advisor.

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ABBRIVATIONS AND ACRONYMS

A.A	Addis Ababa
CI	Confidence interval
COI	Cost of illness
CSA	Central statistics authority
DM	Diabetic Mellitus
GDP	Gross Domestic Product
GNI	Gross National Income
ID	International Dollar
IDF	International Diabetic Federation
INR	Indian rupees
MDGs	Millennium Development Goals
NCDs	Non communicable diseases
NGO	Non government organization
SSA	Sub-Saran Africa
SPH	School of public health
T1D	Type 1 diabetes
T2D	Type 2 diabetes
USD	United State Dollar
US$	United state dollar
VSL	value of statistical life
WHO	world health organization

ABSTRACT

Introduction: Diabetes imposes large economic burdens on national health care, these ranges from individual to national economy. In developing countries, the problem of diabetes was once considered a rare condition, but, because of rapid urbanization, the ageing population and other factors risk factors, its prevalence is raising rapidly. As International Diabetes Federation an estimated average cost in USD was 1,437 per person with diabetes was spent globally on treating and managing the disease in 2013.

Objective: The objective of this study was to assess the economic burden of diabetic mellitus to patients and their families.

Method: An institution based cross sectional study was employed in purposively selected health facilities that provide care for diabetic mellitus in Addis Ababa city from April 1 to May 4, 2015. Structured questionnaires were used to collect the data. Then the data was entered and analyzed using the statistical package for social scientists version 20 (SPSS-20). Both descriptive and analytical statistics was applied. Correlation was done in order to determine relationship between dependent and independent with spearman's rho correlation coefficient.

Result: The study covered 404 diabetic patients**.** We found that median direct cost of caring for a diabetic patient per month was 459 birr. Of this 58.9% was medical cost. And total indirectly cost was median of 6 days (mean 17.29) both by patient and their caregiver in 6 months. Direct cost was significantly higher in those who had higher education, income, family income, frequently had laboratory test, source of medication cost from free to self and insurances in correlation degree of (0.1 to 0.6 or -0.1 to -0.6) at p- value < 0.05.

Conclusion and recommendation: From this study it can be concluded that diabetes mellitus was an expensive illness to treat and manage to individuals who had low income. Medical costs a major contributor to the direct cost of diabetes care. This is a need to increase awareness of these facts among patients, their families and all health professionals and stakeholder involved in the care of diabetes and health policy makers of these countries. Finally further investigation on intangible cost, catastrophic and impoverishments of Diabetes mellitus s on patients and their families. And any efforts should be done at providing medical cost at low cost and other cost reduction activities should be advocated.

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INTRODUCTION

1.1. Background of the Study

Diabetes is a chronic disease that occurs when the body cannot produce enough insulin or cannot use insulin effectively (1). There are three main types of diabetes; type 1 diabetes, type 2 diabetes and gestational diabetes they occur when the body cannot produce enough of the hormone insulin or cannot use insulin effectively. Insulin acts as a key that lets the body's cells take in glucose and use it as energy (1, 2). In 2013 about 382 million people worldwide, or 8.3% of adults are estimated to have diabetes and almost half of all adults with diabetes are between the ages of 40 and 59 years. About 80% live in low- and middle-income countries. If these trends continue, by 2035, some 592 million people will have diabetes. The largest increases will take place in developing economies. In country summary of International Diabetes Federation (IDF) 2013 in Ethiopian estimated diabetes national prevalence was 4.36% and diabetes related deaths in age range of(20-79) was 34,262 (1).

Diabetes is one of the main non communicable diseases. Non communicable diseases is neglected problem even if the last main global agenda, Millennium Development Goals (MDGs) as its public importance did not include chronic disease/NCDs, but in 2005 a World Health Organization report drew attention to the neglect of chronic disease and in 2011 non communicable diseases get focus by a United Nations high-level meeting . It is only relatively recently that non communicable disease in low-income countries has started to receive the attention as a problem that it deserves (3). The global economic burden of NCDs is large, estimated at US$6·3 trillion in 2010, rising to $13 trillion in 2030. A 10% rise in NCDs leads to a 0·5% decrease in gross domestic product (4).

Diabetes imposes large economic burdens, it affects from individuals and their families to national. The costs were direct costs, indirect costs and intangible costs they pay (5, 6). In developing countries like Ethiopia most health-care costs must be paid by patients out-of-pocket, the cost of health care for NCDs/DMs creates significant strain/load on household budgets, particularly for lower-income families (7-10).

1.2. Statement of the Problem

Global economic development had been hindered due to diabetic mellitus (DMs) and NCDs burden to appreciable extent (9-12). In developing countries, like in sub-Saharan Africa (SSA) the problem of diabetes was once considered a rare condition. But because of rapid urbanization, the ageing population and other factors risk factors, (13) its prevalence is raising rapidly. In 2010, over 12 million people in SSA were estimated to have diabetes, and 330,000 people died from diabetes-related conditions (2, 14, 15).

Estimating the prevalence and incidence in sub-Saharan Africa was extremely difficult because of the lack of data (2, 16). Also data on cost of DMs are not sufficient enough in Ethiopia. Particularly studies, which assessed direct and indirect costs of DMs at individual and household level, were scarce (15). Hence policy- makers had little information as to the magnitude of economic cost of DMs to be convinced for reasonable resource allocation.

On the other hand, health managers should rely on scientific data for justification of the resources they need for the DMs prevention and control activities in addition to the morbidity and mortality reports; moreover, local specific study is more desirable than depending on studies conducted elsewhere even within the same country as local circumstances can had significant difference in case of DMs the fact that of risk factors.

1.3. Significance of the study

Identifying costs and factors influencing the costs of diabetic mellitus at individual and household levels can enhance the awareness at all level; protect individuals from high costs, national economy from increased costs, and increase the exercise of cost sharing schemes, avails information for attracting donors who are interested to participate in the alleviation of the burden of DMs. The findings of this study will serve as baseline information for detailed studies; inform policy-makers the extent of economic cost of diabetic mellitus beyond health burden.

This study benefit the governmental and nongovernmental organizations (NGOs), diabetes associations, health professionals and persons with diabetes and their family need to be aware of the current and future economic impact of this disease. It is critical to have an understanding of the economic aspect of diabetes in order to develop advocacy and implement sound public

health programs and prevention policies. To provide tangible evidence for possible strategies, to support individual, family members other stockholders.

LITERATURE REVIEW

2.1. Definitions of Terms

Diabetes is one of the most common non-communicable diseases (NCDs). It is epidemic in many economically developing and newly industrialized countries and the most challenging health problems of the 21st century (1, 6). It affects all persons in all ages' groups and decrees quality of life and life expectancy 5 to 10 years; (2) and imposes a large economic burden on the health care system and families (17, 18). From all type of diabetes type 2 diabetes accounts for 85% to 95% in high-income countries and may account for an even higher percentage in low- and middle income countries. Also Type 1 diabetes is increasing each year in both rich and poor countries. Gestational diabetes is being common as obesity and type 2 diabetes, is increasing throughout the world. The risk of developing type 2 diabetes is high in women who have had gestational diabetes. A person with type 1 diabetes needs to follow a structured self-management plan, including insulin use and blood glucose monitoring, physical activity, and a healthy diet. In developing countries this is difficult (1, 2).

2.2. Epidemiology of Diabetes

2.2.1. Globally

In 2013 the prevalence of diabetes was 382 million people worldwide, or 8.3% of adults were estimated to have diabetes and almost half of all adults with diabetes were between 40 and 59 years (1). The number of people with diabetes is projected to double in three of the six developing regions: the Middle East and North Africa, South Asia, and Sub-Saharan Africa (5).

Globally 175 million people, or close to half of all people with diabetes, were unaware of their disease. About 84% of all people who are undiagnosed live in low- and middle-income countries, (2) this proportion as high as 90% in countries like sub Saharan with many of type 2. Many times children go undiagnosed, even if they receive a timely diagnosis, few have limited to obtain insulin, syringes and monitoring equipment, and as a result, they die (1).

About 5.1 million people aged between 20 and 79 years died from diabetes in 2013, accounting for 8.4% of global all-cause mortality among people in this age group. Close to half (48%) of deaths due to diabetes are in people under the age of 60 (1).

2.2.2. In Africa and sub- Saharan Africa

About 19.8 million adults in the Africa Region have diabetes in 2013 with a regional prevalence of 4.9%. The highest prevalence was 15.4% on the island of Reunion. Countries with highest number diabetes, including: Nigeria (3.9 million), South Africa (2.6 million), Ethiopia (1.9 million), and the United Republic of Tanzania (1.7 million). In Africa more than 330,000 people or 6% of all deaths in the 20-79 age groups were occurred in 2010. More than half of all people with diabetes in the Region live in just four of these high-population countries (1, 18).

Data on the condition of people with diabetes in sub-Saharan Africa and the complications of diabetes that they suffer is very scarce (2, 17). A person with type 2 diabetes can live for several years. During that time high blood glucose is silently damaging the body and diabetes complications may be developing, such as chronic kidney disease and heart failure, retinopathy and neuropathy. These conditions are serious socio economic problems (1).

2.3. Cost of diabetes

2.3.1. Approaching to costs

Mortality and prolonged disability associated with NCDs have a sizeable economic impact on households, industries and societies, both via the consumption of health services and via losses in income, productivity and capital formation (8, 9). In valuation of economic costs, the three methods are: The first one cost-of-illness (COI) approach. It views as the sum of several categories of direct, indirect costs and pain/intangible cost. The second value of lost output: the economic growth approach. This method estimates the projected impact of illness on aggregate economic output (GDP); deplete labour, capital and other factors to productions. The third value of statistical life (VSL) approach (19, 20). In estimating direct costs in most of the early COI studies used a “top-down” approach or a “bottom-up” approach. Indirect costs represent the impact, present and future, of opportunities lost to the individual as a consequence of the disease. For indirect costs: a “human capital” approach the earnings, present and future, lost to that individual as a result of the illness, in “willingness-to-pay” approach, or contingent valuation base, life and lifestyle changes are valued as equal to the amount that the individual is willing to spend to reduce their risk of death or illness, and a friction costs represent the costs associated with the replacement of a sick worker (20).

2.3.2. Types of costs

Generally the economic burden of diabetes comprises of direct costs, indirect costs and intangible costs. Diabetes imposes large economic burdens on national health care systems as well as affects individuals and their family's economies (1, 5).

Direct costs components, diagnostic tests, medicines (insulin, oral drugs) and syringes, the out-of-pocket expenses borne by the patients and their families, including health service provider consultation fees, medicines, tests and transport (21-23).

The indirect costs consist of opportunity cost of time lost due to morbidity and premature mortality. The morbidity related component includes the productivity losses of time invested by patients in outpatient department consultations, travel to and from hospitals, waiting for admission, and during institutionalized treatment; by relatives accompanying patients during pre-admission consultations, travel to and from hospitals accompanying patients, it increase with age, waiting for patients to be admitted, and visiting patients after admission. The premature mortality-related cost is equal to the lost work-years due to premature death (i.e. retirement age minus age at death) time's average remuneration/salary per year (1, 21-23). Diabetes can result in discrimination and intangible costs and may limit social relationships in causing physical and psychological pain. It may also have an impact on a child's academic performance. The costs of treatment and monitoring equipment, combined with the daily needs of a child with diabetes, may place a serious financial and emotional burden on the Whole family (1, 21).

2.3.3. Direct - indirect costs of diabetes

Globally an estimated average cost was 1,437 USD per person for treating and managing diabetes in 2013. The costs they spent vary in countries such as Somalia and Eritrea as less than 30 USD and in the Norway the spent was as large as 10,368 USD. The health spending due to diabetes was 5,621 USD and 356 USD per person with diabetes in high-income countries and in low- and middle-income countries respectively (1).

As identified in economic burden of diabetes in the global review, in India 85–95% of all health care costs were borne by individuals and their families from household income that diminishes

need of other expenditure as much as basics needs and worries families to have intangible costs(24)

Systematic review in Canada shows, individuals with diabetes had between 5.4 and 18.1 days of absenteeism per year and for individual without diabetes between 3.4 and 8.7 days per year. This shows that the burden of diabetes more than two times higher. Individuals with diabetes retired 0.7 years earlier than those without diabetes (25). In a study in Sweden the average number of sick-days throughout 12 months was 21.4 days per individual. Patients in this study had on average an age-standardized utilization of 3.7 out-patient visits to physicians and 4.8 in-patient days. The average number of nurse visits, age-standardized in relation to physician visits, was 6.3. In mean age of participant 66.3 years, 53% were men, mean duration of follow up was 9.3 (8.7) years (26).

In America people with diabetes have two to five times higher per capita total medical expenditures and per capita out-of-pocket expenses than people without diabetes (27). "One in six patients said they could not work due to diabetes, and one in three said they could not work as much as they wanted. A study revealed that 15% of family members had given up work to care for a family member with diabetes, and a further 20% had to cut back on work. The effect on the family exceeds pure economic costs in sub-Saharan Africa as it is often the family members who bear the primary responsibility for care" (2). It mainly influences mother and children especial gender based on females. This influences the work of women empowerment and education and decease women income generating capacity.

Study in Indian showed that the total cost of diabetes was estimated 14,517.42 rupees (263.78 Euros) per person annually. In this study direct cost of care of diabetes was estimated to be 71.25% of the total cost. The greatest of the costs (42.38%) of direct costs were on buying drugs. More than 95% of the total costs of treatment were met by patients and their families in this study. Inadequate healthcare facilities in developing countries are the means that families have to bear the large financial burden (28). Recent study in Indian shows, the mean expenditure on diabetes in one month was INR 950 ≈ 17.3 Euros per household. Direct cost was INR 679 (71.5%) and indirect cost was around INR 271 (28.5%). Highest expenditure was incurred on drugs. Per household expenditure on drugs was around INR 450, 66% of direct costs (23).

Study in Brazilian tells that total direct cost of diabetes care was US$1335 per patient/year, out of which US$1014 per patient/year expended on direct medical costs and US$332 per patient/year on non-medical costs. In this study patient transportation costs was 52 US per patient per year. About 48.2% of direct costs were attributed to medication. And 24.6% of the patients bought medicines from private pharmacies (29).

Study in Pakistan informs the total mean direct cost borne by the person with diabetes and/or his/her family is estimated to be Rs. 1,930 (32.2 USD) in the single visit. The overall mean economic cost borne by each person with diabetes and/or his/her family came to Rs. 2,070 (34.5 USD) for each visit. From total for medicine take a largest share (46%). The Adjusted cost to monthly and yearly basis was Rs. 1,035 (17.3 USD) and 12,420 (207 USD) respectively (22).

Study in Thailand shows that annual average treatment cost (direct medical) of diabetic patient was 158 USD. With highest proportion of the treatment cost was related to pharmacy services (45%) and the least with laboratory investigation17.38 USD (11%). (Approximately 40 THB=US $1)(30).

Study in Sudan identified annual total median direct costs of type 1 diabetes care was USD 283. And one third of it was used for insulin. In type 2 diabetic patients this costs was USD 175 including ambulatory services. Income level affects the cost directly in utilizing service area and amount of expenditure(31). In 2005, Economic burden of diabetes mellitus in the WHO African region study; for countries categorized GNI >8000,7999-2000 and <2000 international dollars (ID), the total annual direct Cost of Diabetes per patient in international dollars(US) b/n 876.0 - 1,220.6. In this study the direct average costs was higher in low income countries as compared and high income and inverse in indirect costs due to cost affecting variables (21). Study In Nigerian indicates the direct cost of diabetes care per patient per month estimated mean direct cost was 10,950 Naira/73 USD per patient per month, with insulin about 51.1% of this direct cost, Syringes 21.9%, Consultations 3.2%, Transportation 5.5%, Self monitoring of blood glucose (SMBG):-Test strips 11.0%, laboratory investigations 4.6% and Miscellaneous (cotton wool) 2.7%. About 50% of the parents spent the least cost between 60,000 and 70,000 Naira during the initial hospitalization at the time of diagnosis of diabetes. (US Dollar = 150 Naira) (32).

The total cost of illness of diabetes was estimated USD 418,696.45 in 2008 by 475 patients. The contributions of direct medical cost, direct non-medical cost and indirect cost in total cost of illness were 22.66%, 39.87% and 37.47% respectively. Average direct cost was 555.32 USD per person from this direct medical cost was 202.7(36.5%) and 352.58(63.5%) with direct non medical (33).

As it reviewed; Diabetes in Africa: epidemiology, management and healthcare challenges; with notable exceptions in Namibia and South Africa payment for medication of diabetes was the responsibility of the patient and unfortunately drug costs for diabetes are beyond the reach of many, particularly for those requiring insulin. In Ethiopia, the mean annual expenditure of diabetes care for a child accounted for 65% of family expenditure on health; insulin needs consumed 36% of this amount (13).

Study in Ethiopian identified that; hospital diabetic patients source of costs was 69.1%, 26.8%, 2.4% and 1.6% for free payment, self payment, insurance and no information respectively. And for health centres diabetic patients 35.8%, 55.7%, 2.8% and 5.3% belonged to self payment, insurance and no information respectively (18). Study in Jimma shows; cost to drug indicates that for free 97.9% and for paid 2.1%. Except for 1 patient, all were on pharmacologic therapy for their diabetes at the time of study (34). Study in Nigeria identified; the leading sources of money for payment of initial hospital admission bill were friends/ relatives (40%) and loans (30%). Others sources were personal savings (20%) and Organizations' donation (10%) (30). Study in India indicates; the financial options of about 74.3% used their savings to cope expenditure due to diabetes; 5.3% took loans in to meet their expenditure, 8% of the respondents some form of health insurance and their expenditure reimbursed from their employer. The remaining 12.4% households used other methods/ borrowing. In this study it is highly influencing the people saving habits and pulling back their development or well being (23).

2.4.Factors Affecting costs

As living in high-income countries, people living in low- and middle-income countries pay a larger share of health expenditure because they lack access to health insurance and publicly available medical services. In Latin America, families pay between 40% and 60% of medical

expenses from their own pockets. In some of the poorest countries, people with diabetes and their families bear almost the total cost of medical care (1).

The cost of illness is dependent on many variables; type of disease, the number and severity of complications as well as the demographic characteristics of the study population earning, access to medical care, as well as, differing quality of care, it is very important that all factors are taken into account to get the correct picture. Persons of higher Socio-economic status (SES) were spending more in self care and other medications and this difference was found to be significant for both direct and indirect costs (15, 22, 35). The cost difference was significantly higher among clients with a longer duration of diabetes and the indirect cost difference in this study between the groups was not significant ($p = 0.824$) (22).

In Benin City, mean total direct cost of diabetes/insulin dependent care was related to their mean monthly income of the parents/clients. The average distance travelled per patient per visit was 18.6±7.5 Km. "The patients were usually accompanied to the follow-up clinic by their mothers; none was accompanied by the father" (32).

OBJECTIVES OF THE STUDY

3.1. General Objective

The overall objective of this study was to assess the economic burden of diabetic mellitus to patients and their families who attending health facilities of Addis Ababa from April 1 to May 4 2015.

3.2. Specific Objective

- ✓ To determine the direct costs of diabetic mellitus to patients and their families
- ✓ To determine indirect costs of diabetic mellitus to patients and their families.

METHODS

4.1. Study Design

This was an institution based cross sectional study employed from April 1 to May 4 2015 in Addis Ababa city administration. And focus on health facilities that give services in management of diabetic mellitus. It is Prevalence based cost study, measure the economic burden of a disease in a given period. Patient perspective were used, all costs patient and their families incurs were included. Thus, the cost in price and in the form of production losses was included. A micro-costing or bottom up approach to calculate the direct and loosely human capital approach to indirect costs were used.

4.2. Study Area

Addis Ababa is the capital of Ethiopia and located in the central part of the country. It is the largest as well as the dominant political, economic, cultural and historical city of the country established in 1887 by emperor Menilik II. It has the status of both a city and a state. It is the capital of federal government and a chartered city. The city is divided in to ten sub-cities which are the second administrative units next to city administration. The sub-cities are also divided in to Woredas, which are the smallest administrative unit in the city. There are 116 Woredas in the city administration. The population of Addis Ababa according to Central Statistics Authority (CSA) Urban Employment Unemployment survey study of 2012, there were a total of 3,061,404 populations in the town.

In Addis there are many health facilities providing DMs management services, six total government hospitals fives, 86 public/ governmental health centers almost all health centers, private higher clinics and hospitals are providing the services. But only one specialized diabetic center in the town and as well as in country, Black Lion diabetic center with five diabetic specialize doctors even if the problem is prevalent as it is urban city and there are health facilities provide the services.

4.3. Study Population

Source population: - In this study the source populations were all diabetic patients live in Addis Ababa.

Study population: - Patients or clients of diabetic mellitus who live in Addis and had followed up in hospitals, health centres and private health facilities identified as study area. From public hospitals Black lion, and Zewditu hospital, from health Centres Kasachse and Nifas Silik Lafto Worda 3 health centers, from private Senaye higher clinic.

Inclusion and exclusion criteria

Inclusion: -

- Type 1 and type 2 diabetic patients/clients who live in Addis Ababa and have follow up in health facilities for last 12 months and more.

Exclusion: -

- Client of pregnancy related diabetes/gestational diabetes,
- Type 1 and type 2 diabetic patients, who have followed up less than 12 months.
- Patients/clients using inpatient services.
- Clients notable to talk or very young children's

4.4. Sample Size

The number of patient/client included in this study were determined by using the single population proportion formula, where the proportion and standard deviation of diabetic costs not available and lack of similar studies in this country, unknown population constant were used with the following assumptions: Expected proportion (p) of the study participants who had regular follow up and cost for their health assumed (50%), marginal error (d) 5% and confidence interval of 95%. A proportion of 50% will be preferred due to lack of similar studies. The formals were:-

$$\mathbf{n = (Z\ 1\text{-}\alpha/2)^2 p\ (1\text{-}p)/\ d^2} \qquad \text{Equation 1}$$

Where: n is sample size and based on equation it is

$n = 1.96^2 * 0.5 * 0.5 / 0.05^2 \approx 384$

Non response rate = n*10% = 384*10% = 38.4

Total sample size = non response rate + n = 38.4 + 384 ≈ 422

This yields a sample size of 384 respondents. Considering 10% non-response rate, the final sample size was determined to be 422

4.5. Sampling procedures

Study facilities were identified based on criteria of service provision to specify diseases/diabetic mellitus. To have representative the study areas stratified into three categories public hospitals, public health centres and private health facility. Identified facilities, hospitals and health centres were purposively selected based on long service year and patient availability, then study subject's patients/clients was systematically selected (every next patients selected) and interviewed in specified period data collections. To insure adequate sample size to each categories proportional allocation will be done with formula of ni=n/N*Ni where ni is required sample in each categories', n is total required sample in study, Ni assumed number of patients in each group. To had comparative representative sample from each category assumption were considered and used with N as average total number of client who had follow up in identified facility in one day in governmental hospitals, health centres and private facility were 100, 28 and 38 respectively, taking the sum as N, and representative samples were calculated and collected 254, 71 and 97 from governmental hospital, health centres and private facility respectively.

4.6. Data collection procedures

The instrument to measure costs and factors of cost of diabetic management were structured questionnaire was specially designed for this study, it was based on a questionnaires used earlier to determine costs of TB illnesses in northern part of Ethiopia (36) and modified and adjusted to the objective of this study. The questionnaires were used for measuring direct, indirect, and factors affecting costs.

And face-to-face interviews were conducted with key informant of the selected individual who visits diabetic mellitus clinics/health facility, for children less age (<18 years) and for very old patients their caregivers were co interviewed. The interviews were carried out by trained data collectors and surveyors in specified time of data collection. Data completeness checked each after data collection finished before to tanks the client by collector and then by supervisor.

4.7. Operational Definitions

Direct costs: cost or expenditures in Ethiopian birr born by patients and their family in order to diagnosis and treatment of diabetic mellitus. E.g. cost of prescribed drugs, investigations etc. It includes medical and non medical costs used by patients and their caregiver.

Medical costs: includes diagnostic tests, medicines (insulin, oral drugs) and syringes, health service provider consultation fees, laboratory tests costs, inpatient and outpatient medication costs, emergency costs and provision cost.

Non medical costs: includes transport, cafeteria services and prevention actions costs.

Indirect costs: costs or losses in productivity in Ethiopian birr (lost days) that borne by patients and their families with contact of diabetic mellitus. E.g. income lost due to absent of work

Intangible costs: cost of pain, suffering and loss of leisure time due to diabetic mellitus.

Outpatient diabetic mellitus case: who has been on treatment and is receiving his or her treatment on ambulatory basis, not admitted as in patients.

Inpatient diabetic mellitus case: who has been diagnosed to have diabetic mellitus and being admitted in hospitals/health facilities for close follow up and treatment.

Diabetic mellitus case: a patient/a client who has been diagnosed as type 1 and type 2 diabetic problems.

Catastrophic expenditure: is an expenditure occurs when a household's total health payments for diabetic expenditure exceed of household's capacity to pay.

Impoverishment: A non-poor household is impoverished by health payments of diabetic mellitus when it becomes poor after paying for health services**.**

Out of pocket health payments: refer to the payments made by households at the point they received health services.

Chronic diseases: A chronic illness that lasts for a very long time. Compare to acute.

Non communicable diseases: non contagious, non infectious diseases.

Family: it includes individual who cares the diabetic patients/clients.

Patient: an individual who have diabetic mellitus and followed up in diabetic management centers/hospitals/health centers/clinics.

Medical provision cost: was average estimated cost of medical equipments, drugs and any medical provisions from someone that a patient got in last 6 months.

4.8.Variables

- ✓ Dependent variable: Direct and indirect costs of DMs to patient/client and their families
- ✓ Independent variables: Socio demographic variable such as, Age, sex, marital status, occupation, monthly income, educational status, family number, distances of health facility.

4.9. Data Analysis Procedures

The data will be analyzed using the statistical package for social scientists version 20 (SPSS-20) statistical software, and both descriptive and analytical statistics were applied in analysis. Descriptive statistics in terms of frequency counts and percentages were used for discrete variables such as socio-economic, demographic variables, clinical variables (type of disease), and direct and indirect treatment costs. Mean, median and standard deviations were calculated for all the continuous variables, certain socio-economic, demographic, and various costs variables. Medical costs of people with waiver privileged were considered as the cost for analysis, taking the estimated cost of expenditure from the pharmacy. Analysis done having a correlation, it shows the relationship between two variables. It measure how variables or rank orders were related. Assumptions were used for quantitative, normally distributed variables; choose the Pearson correlation coefficient and Manny Whitney U test. If your data are not normally distributed like this study or have categories of independent variables with continuous dependent variables; consider independent categorical variable from small to large and choose Kendall's tau-b or Spearman and Manny Whitney U test, which measure the association between rank orders.

4.10. Data Quality Management

Based on the objective of the study a questioner developed and translated to local language/Amharic keeping local vocabulary then back translated to English to maintain consistence. Then the questioners had tested a pre test on pilot area. A data collectors were from health background with additional training were participated. Furthermore supervisor and the principal investigator checked on daily basis for completeness, accuracy, clarity and any miss understanding in the questioner. After data collected it was entered to software carefully. Miss entered data were checked cleared and corrected. To keep the data distribution outlier and missed data's were managed by replacing maximum of normal distribution by adding plus 1,2,3, etc and replacing missed values by mean. Data miss important (required) values were discarded.

4.11. Ethical Consideration

The study was approved by the school of public health (SPH) research and ethics committee. In addition Black lion hospital internal medicine department and Addis Ababa health bureau ethical committee approval was ensured since the data collected from their facility. Legal letters are summated to concerned health facility and got permission. Written or oral informed consent was taken by informing the purpose of the study from those willing to participate in the study before collecting data and anyone hadn't interest or complete were leaved considering non respondent.

RESULT

5.1. Demographic and Socio Economic Characteristics

As it shown in table 1, this study includes diabetic patients who had follow up in health facilities in Addis Ababa for one year and more. Out of total 422 samples 404 (95.7%) individuals (175 male and 229 female) were interviewed.

The age of individual included in this study ranges from 14 to 83 with mean age of 47. Relatively most of patients 148(36.6%) were in age group of 46 to 60. Almost equal number of the samples attended primary (99/24.5) or secondary (97/24%) education. In the case of occupation, 127(31.4%) were unemployed, and 17(4.2%) were students. About 186(46%) of participant had a role of mother in family member. The average family size of the individual interviewed was 4.52. (Table 1)

About 294 (72.7%) patients had their own income the rest were depended on their families. The median income of participant was 1,600 Birr. And their family income ranges from 300 to 20,003 with median of Birr 3,500 per months.

Table 1: Socio demographic characteristics of diabetic patients, who had follow up in health facilities of Addis Ababa April 2015.

Variable	Number	Percentage
Sex(N=404)		
male	175	43.3
Female	229	56.7
Age (N=404))		
14 – 30	69	17.1
31 – 45	103	25.5
46 – 60	148	36.6
61 and above	84	20.8
Education (N=404)		
Illiterate	39	9.7
Read and write	38	9.4
Primary	99	24.5
Secondary	97	24.0
Diploma	63	15.6
Degree and above	68	16.9
Occupations (N=404)		
Unemployed	127	31.4
Employed	198	49
Retired	62	15.3
Student	17	4.2
Employee type (N=198)		
Government	58	29.3
Private	100	50.5
NGO	40	20.2
Patients role in household (N=404)		
Father	148	36.6
Mother	186	46.0
Child	56	13.9
Other family member	14	3.5
Average household size	4.52	
Average employed family members	2.12	
Median income of the respondents (N=294)	1600	
Median income of family (N=404)	3500	

5.2. Clinical Characteristics and Clinical Burden of Diabetes Mellitus in the Study Participant

As depicted in Table 2, only 55 (13.6%) of diabetic patients knew their diabetic status by diabetes mellitus examination while 347(86.3%) knew their status having other diseases examination. From total participant 94 (23.4%) were type 1 diabetic patients.

The mean of follow up duration year of study participants was 8.35 (SD 6.75) years. Type one patients had a frequency of follow up gap with range of 1 to 6 months in mean of 3.22 and a type 2 patient were in range of 1 to 9 months with mean of 2.87. An average time to wait to be seen by a doctor was 3.15 hours.

Table 2: Clinical characteristics and burden of diabetic patients who had follow up in health facilities of Addis Ababa, April 2015.

Variables	Frequency	Percent
Ways of DMs identified at first(N=404)		
Having DMs exam	55	13.6
Other diseases examination	349	86.3
Type of DMs		
Type 1	94	23.4
type 2	308	76.6
Average duration year(N=404)	8.35	Range (1 to 35)
Average T1 frequency of visit(N=92)	3.22	Range (1 to 6)
Average T2 frequency of visit(N=312)	2.87	Range (1 to 9)
Average wait at reception in hours	3.15	Range (0.3 to 9)

As explained in Table 3, about 286 patients had worries related to diabetes. From them more than 88.5% of were concerned because of illness; cost of illness, illness related social interaction and related problems with medium and above degree of worried. With regard to the behaviour of family members toward their illness almost half 200 (49%) of them reported that a female family member provides care.

Table 3: Intangible burdens of diabetes toward diabetic patients and their family members who had followed up in health facilities of Addis Ababa, April 2015.

Variables	Frequencies	Percentage
Degree of worries related to DMs(N=286)		
very strong	68	23.8
Strong	73	25.5
Medium	112	39.2
Fair	23	8.0
Rarely	10	3.5
Mainly household caregiver(N=404)		
Female Sex, mother, wife, sister, daughter	200	49.5
Male sex, father, husband, brother, son	80	19.8
All family member and others	124	30.7

Direct cost includes medical and non medical costs. Where a medical cost was 58.9% of direct cost with median of 240 (mean 371.39). Non medical cost was in median of 180.5 (mean 258.93). Over all monthly direct cost was median of 459.12(630.33) birr per patient per months.

About 96(32.6%) individuals' direct cost expenditure was more than 40% of their incomes for treatment of diabetes mellitus monthly. And 41(10%) individual direct cost expenditure more than 40% of their family's income for monthly treatment diabetes mellitus.

Table 4: Direct costs of diabetic patients and their family members in who followed up in health facilities of Addis Ababa, April 2015.

Variables	N	Mean	Median	Std. Deviation
Monthly Medical Cost	404	371.39	240.0	331.83
Laboratory and investigation cost	404	102.76	34.00	134.83
Insulin and Syringe cost	213	189.75	150.0	119.92
Oral anti hyperglycaemic agents	193	123.93	65.0	143.65
Insulin or Drugs cost in both user	404	159.24	120	135.77
Monthly Emergency cost	69	228.65	150	189.74
Monthly inpatient cost	59	298.03	250	238.38
Monthly medical provision cost	69	156.99	141.66	51.02
Monthly Non Medical Cost	404	258.93	180.50	264.49
Monthly Prevention Cost	317	268.99	200	218.94
Monthly Cafeterias cost	215	19.23	10	24.46
Monthly Transport Cost by Patient	404	32.13	5.36	73.31
Monthly Transport Cost by Caregiver	145	15.29	6.00	24.24
Monthly Total Direct cost	404	630.33	459.12	511.54
Individual expenditure more than 40% of income for direct cost (N=294)				96(32.6%)
Individual expenditure more than 50% of income for direct cost (N=294)				70(24%)
Individual expenditure more than 40% of family income for direct costs (N=404)				41(10%)
Individual expenditure more than 50% of family income for direct costs (N=404)				28(7%)

Indirect cost was a time devoted by diabetic patients and their caregiver in seeking treatment during in 6 months recall period. It includes detail of time spent by patients and their caregiver having house hold rest, in seeking treatment, in case of inpatient treatment and emergency treatment.

It was expressed by loss of days; directly by patients during follow up visits, days in inpatient treatment, days in emergency visits and emergency managements totally 4460 days with median of 6 days were used. In directly 2507 days by 212 caregivers with median of 8 days were used

in 6 months for care of patients. Total days used by patients and their caregiver were 6987 days with median of 6 days (mean 17.23) in 6 months.

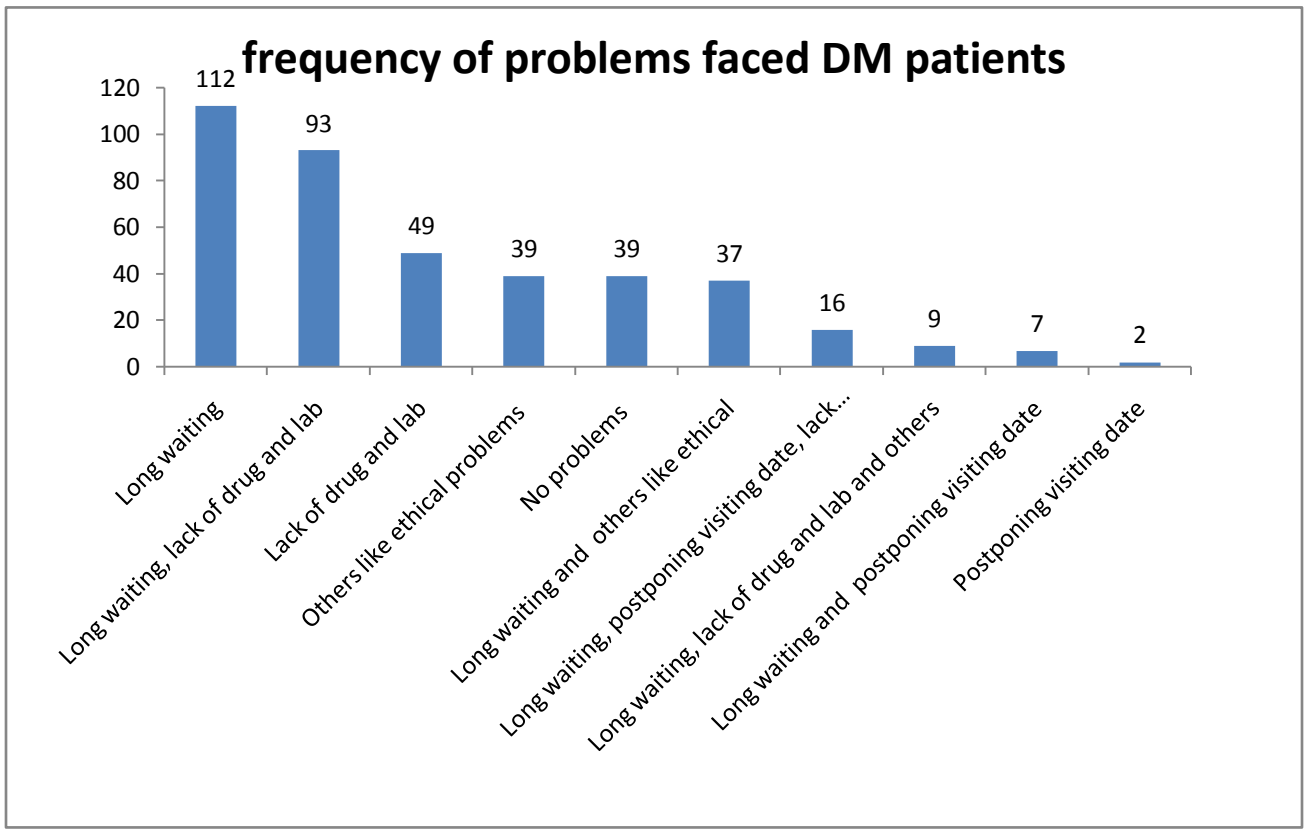
About 74 (18.3%) individuals used more than 30 days in 6 months for care of diabetes by patients and their families. And 108(26.7%) participants were used more than 20 days.

Table 5: Loss of days by diabetic patients and their family members, in who had follow up in health facilities of Addis Ababa, April 2015.

Variables	N	Mean	Median	Std. Deviation
Total Days Used By patient in 6 Month	**404**	**11.14**	**6.0**	**14.84**
Number Day used Visit in 6 months	404	3.58	3.0	2.35
Stopped School days	17	7.94	6.0	5.73
Stopped Work days	72	12.40	10.0	10.01
Days In Care In Household for unemployed	140	9.91	7.0	8.17
Days used in inpatient services	53	6.52	5.0	5.65
Days Used During Emergency	69	4.23	3.0	3.62
Total Days Used By Caregiver in 6 Month	**212**	**11.68**	**8.0**	**12.52**
Days With Caregiver in follow up	144	3.42	3.0	2.62
Days With Caregiver in patient case	52	6.61	5.0	5.67
Days Used By Caregiver in Emergency	65	3.89	3.0	3.23
Days giving Care In Household	140	9.91	7.0	8.17
Total Days used by patients and their caregiver in 6 Months	**404**	**17.27**	**6.0**	**25.05**
Patients and their familes used ≥ 20 days in 6 months	108(26.7%)			
Patients and their familes used ≥ 30 days in 6 months	74(18.3)			

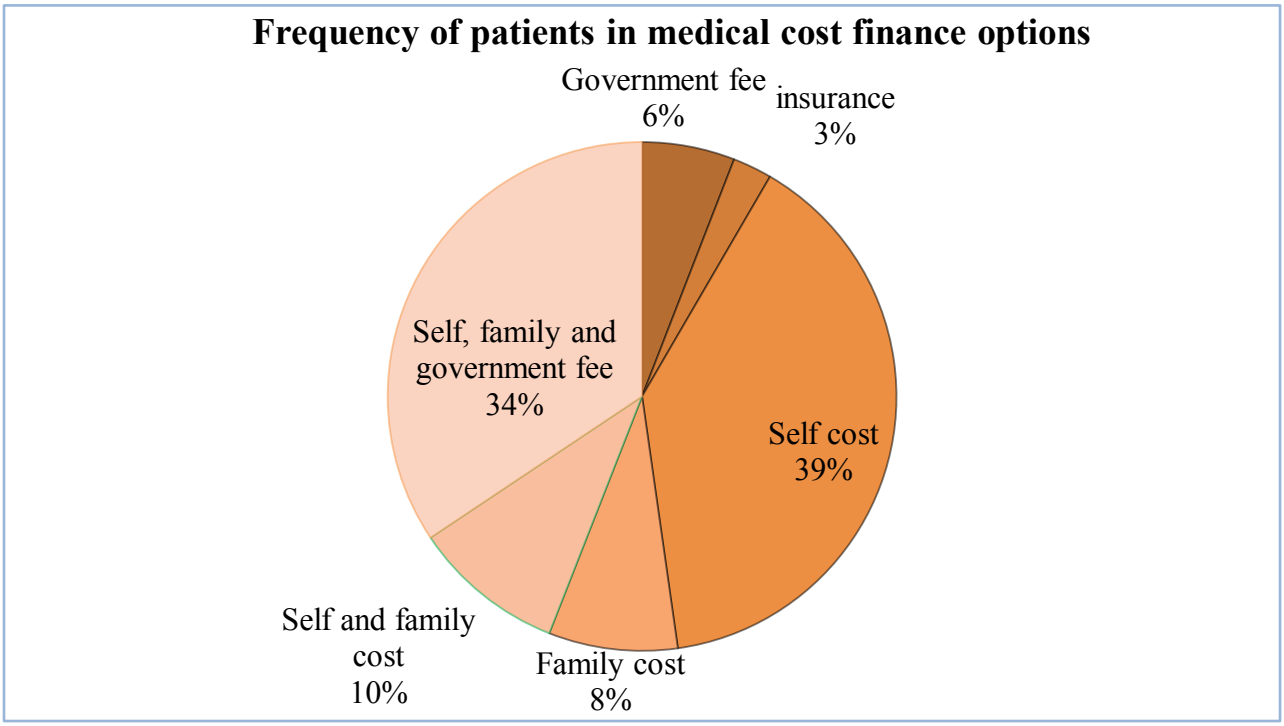
In this study about 274 (68 %) of patients complained long waiting time and 167 (41.5 %) faced a problem of lack of laboratory and drugs in facility of the follow up.

Figure 1: Problems faced diabetic patients and their caregivers during follow up in health facilities of Addis Ababa city administration, April 2015.



In financial source of diabetic patients a total of 138(34.24%) had free medical services with individual and family contribution while the lack the services at public facility and only 24 (6%) had complete free medical services, without lacking the wanted services in last 6 months from public health facility.

Figure 2: source of finance of medical cost of diabetic patients and their families in health facilities of Addis Ababa, April 2015.



5.3. Correlates of costs of diabetes mellitus with independent variables.

Socio demographic parameters and important variables were correlated with dependent variables of medical cost, non medical cost, direct cost and indirect cost. The independent categorical variables considered as ordinal or assumed in increasing from small to large.

Direct costs were moderately correlated with education, individual income, family income, laboratory frequency and finance sources in range of spearman correlation coefficient (0.3 to 0.6 or -0.3 to -0.6) and family number, employed family number, follow up year, and distance were weakly correlated in a ranges (0.1 to 0.29 or -0.1 to -0.29).

Also sex and DMs type were checked in Mann-Whitney U test and DMs type had significant difference at Z= -2.05 and P=0.04. But in sex there was no significant difference to direct costs.

In indirect cost or total days used were moderately correlated with visit number and weakly correlated with family income and follow up year. No parameters in this study correlated

perfectly and strongly to medical, non medical, direct and indirect cost. The rest variables like age, sex and DM type had no correlation.

Table 6: Correlation of direct and indirect costs to independent variables of diabetes mellitus patients and their families in health facility of Addis Ababa, April 2015

Variables	Spearman's rho correlation coefficient.			
	Monthly Medical cost	Monthly Non medical cost	Direct cost	Indirect cost
Visit number in 6 months	-.056/.260	.163/.001**	.050/.321	.470/.00**
Education	.287/.00**	.338/.00**	.354/.00**	-.022/.66
Occupation	.042/.405	.121/.015*	.076/.128	-.061/.219
Family number	.101/.042*	.046/.353	.101/.042*	.060/.226
Employed family number	.209/.00**	.275/.00**	.282/.00**	.061/.239
Income	.393/.00**	.498/.00**	.492/.00**	.014/.812
Family income	.435/.00**	.560/.00**	.545/.00**	.102/.041*
Follow up year	.177/.00**	.086/.086	.148/.003**	-.123/013*
Laboratory frequency	-.398/.00**	-.330/.00**	-.415/.00**	-.068/.174
Distance	.227/.00**	.161/.001**	.240/.00**	-.085/.089
Medication finance source	.295/.00**	.268/.00**	.319/.00**	.020/.689

Mann–Whitney test of independent variable sex and DMs type with direct and indirect cost

Sex Mann-Whitney U=19731.0, Z= -264, P=0.79

DM type Mann-Whitney U=12451.5, Z= -2.05, P=0.04

Sex Mann-Whitney U=17902731.5, Z= -1.85, P=0.064

DM type Mann-Whitney U=13451.5, Z= -1.048, P=0.295

Note ** correlation significant at the 0.01 level (2-tailed) and *at the 0.05 level (2-tailed)

6. DISCUSSION

This study found that the median direct cost of study participant was 459.12 (mean 630.33) birr per patient per month. Of this medical cost was 58.9%. The relative results were in Brazil 75%, in Indian 68.4%, in Thailand 36.5% and in Nigeria 75.7% (28, 29, 32, 33). The result from Thailand was somewhat different from others because of health system in Thailand; where hospitals provide drugs with different options (cost). Another reason may be non medical expenditure costs were expensive and take higher percentage than medical as it was a percentile comparison, medical costs may be subsidized, also there may be awareness of patient and advice of medical professional to use cheap cost drugs from options (33). Comparatively medical cost of this study per person per month was with median of 11.4 (mean 17.6) USD. It was almost similar to in Indian studies (11.39 and 15.08 USD) and in Thailand studies (13.6 and 16.89 USD) and less than of study in Brazil 84.5 USD (23, 28-30, 33). This may be in considering the direct cost calculations vary between the studies and health system difference between countries. (1USD =21Birr)

Regular median monthly medication cost (investigation and laboratory, insulin and syringe and oral tablets) was174 (mean 262.0) birr, where the average cost of insulin or oral tablets account 60.77% regular medication cost or 7.5 USD, while the rest was for laboratory and investigation. In Thailand 5.9 USD or 45% of direct cost was used for pharmacy services. In Nigeria 37.3 USD or 51.1% of direct cost was for insulin per person per month (30, 32). The difference may be mainly health system; since it was related to pharmacy or drugs cost (subsidizing drug cost, import/export drug policy) of the countries in addition of methodological assumption influences the differences in the studies.

The total direct cost of diabetes in this study per month was 459.12 birr (21.86 USD) which was higher than that of Pakistan (16.1), India (12.4 and 18.4), Sudan (14.58) and Thailand (13.16 and 16.89), while it is less than that Nigeria (73) and Brazil (111.25) (22, 26-30, 32, 35, 36). This might be due to difference in costs in different countries since methodological difference and other factors like the structure of health system (policy) and socio economic status of patients.

In this study direct cost was moderately correlated with education, income, family income and medication finance sources in range of 0.3 to 0.6 with P value < 0.05 and family number,

employed family, duration of follow up year, and distance had weakly correlation in range of 0.01 to 0.29 with P value < 0.05. DMs type had significant difference at Manny Whitney U test at P 0.04. And occupation had weak correlation to direct non medical costs. Study in Pakistan shows there was significant cost difference with follow up year, direct cost had difference in sex but not significant, significant marginal difference with age and higher with high socio economic status like education and income (22). It was almost similar to this study. In Indian study, none of socio demographic parameters except education had significant correlations with total costs, direct costs, and indirect costs (28). There were similar findings in all studies education and incomes level had significant association in both studies. This may be because of more awareness of disease with higher educational status and that more educated people earn more; hence can afford more for their health. Also similarly age, sex, occupation and house hold role (in this study) had no correlation to direct costs like the Indian but study in Pakistan there was cost difference in sex and age, this may be socio economic and cultural differences like gender role. In studies cost differences may be methodological, health system (policy priority and concern to struggle economic and non economic burden) like having diseases management and medication guide lines and health insurances system and socio economic status influences the cost patient and their families. Totally cost differences may be costs of commodities vary in countries since different socio economic variables, different health care policy (having endogenous pharmaceutical companies and social insurance system) and different quality of services provided.

Both by patients and their caregiver a total of 6987 days with mean of 17.29 and median 6 days were used in 6 months, it was indirect cost. This study finds indirect cost was correlates with visit numbers, household role, family income and follows up year. A study done in Pakistan also shows there was associated with sex, family income and not significant difference with follow up duration year (22). In both of the studies there were almost similarity; people with high socio economic status (SES) and female sex (not in this study) were lost many indirect costs since the pay, need frequently services and visit frequently; and also it may be in developing countries many times female need or participating in accompanying activities this may be a factories. In this study even if it was not significant 50% female Vs 20% male participate in giving care to DM patient. In another study children and patients with long

duration (old age) accompanied with a caregiver giver with female sex (32). This shows diabetes was gender burdened diseases.

In this study direct days lost by patient in 6 months were in average of 11.14 (median 6) days. Mean of outpatient visit in 6 months was 3.58 (median 3) days used. In study in Sweden showed average of 3.7 out-patient visits to physicians also 6.3 out-patient visits by nurses and 4.8 in-patient day's Nursing home (26). In general comparison, Sweden's patients were frequently had medical follow up average of 10 days out patient and 4.8 in patient nursing cares in 12 months , total days used as a result of diabetes more than this study, this may be due to socio economic status like income and education/awareness difference. Also health care system (social insurance and patient care system) may be influence the total days used.

7. STRENGTH AND IMITATION OF THE STUDY

7.1. Strengths

This data was gathered from health centres, private facilities and governmental hospital and it represent different group of patients with different back ground.

Information required in calculating costs was based on a survey of patients and their relatives rather than documenting review.

7.2. Limitations

Not all age groups were included excluded under age groups (<14 years), with and without complication not separated.

Other aspects of economic burden, like social burden and intangible costs (stress/stigma borne by patients and their families) could not be evaluated.

Cross sectional study design limitation and recall bias might affect the information obtained from patients.

Indirect cost calculation didn't expressed in price rather than days lost.

8. CONCLUSION AND RECOMMENDATION

8.1. Conclusion

From this study it can be concluded that diabetes mellitus was an expensive illness to treat and manage individuals who had low income. This study found that the median cost of illness of diabetes was directly 459 birr (approximately 22 USD) and about 96(32.6%) individuals' cost more than 40% of their incomes for direct treatment (direct cost) of diabetes mellitus monthly. And indirectly 6 days lost per 6 months per patient by patients and their families. Medical costs, purchase of insulin and drugs, laboratory investigation costs (cost of need of those small number of specialist) being a major contributor to the direct cost of diabetes care.

Diabetes also induces indirect cost, since limited specialist, no medication guideline, limited diabetes center and small number of public pharmacies with shortage of drugs and other factors enforces diabetic patients cost more than they can in addition to direct cost. About 74 (18.3%) individuals used more than 30 days in 6 months for care of diabetes by patients and their families.

Finally this is a need to increase awareness of these facts (economic burdens) among patients and their families. Also all health professionals and stakeholders who involved in the care of diabetes in developing countries, as well as health policy makers of these countries should be aware. It also makes clearly evident that the largest share of costs was being borne by patients and their families.

8.2. Recommendations

- ✓ The burden of the disease on individual as well as on the family was high, the health policy makers should emphasize on initiatives preventing the disease prevalence and counseling to the diabetic patients on their problems.
- ✓ Provision of insulin and other anti diabetic drugs at a reduced cost is advocated by pharmaceutical companies and other organization like diabetic associations.
- ✓ Diabetes mellitus treatment guide line and additional training should be prepared by minster of health and other originations working on health, for service providers at health facilities.

- ✓ Further investigation should be done on cost of illness of diabetes over all part of the country by Minster of health and other research institute for resource mobilization and health system planning. Also studies should be done including intangible cost, catastrophic and impoverishments of DMs on patients and their families.

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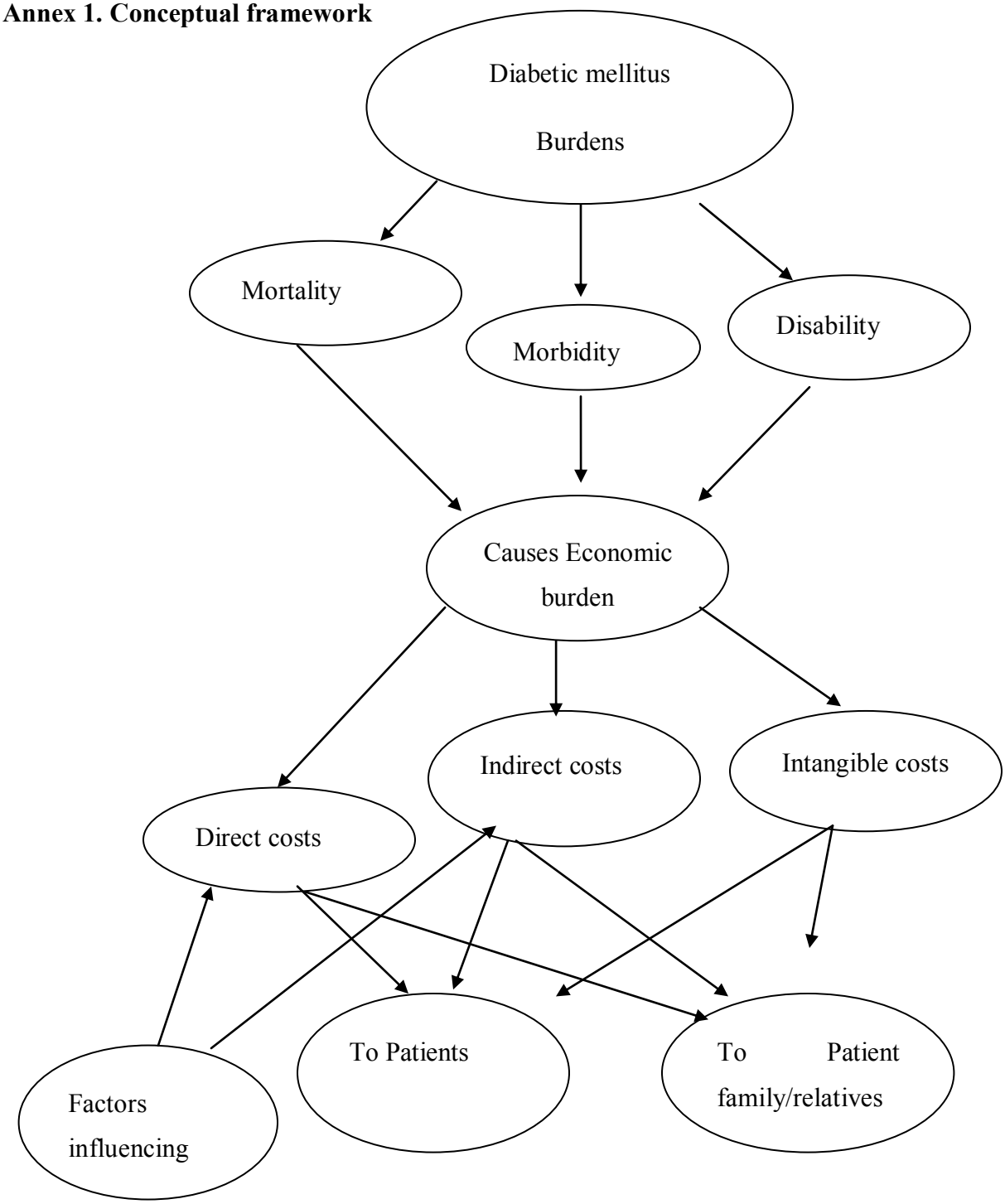
10. ANNES

Annex 1. Conceptual framework



Annex 2. Questionnaire (English version)

ADDIS ABABA UNIVERSITY

SCHOOL OF PUBLIC HEALTH

QUESTIONNAIRE FOR DIBETIC PATIENTS

Dear participants,

This questionnaire is designed for the purpose of research study. The main objective of this questionnaire is to survey on economic burden of diabetic mellitus to patients and their families who have follow up in Addis Ababa health facilities used as a partial fulfilment of MPH. Whatever information you provide will be kept strictly confidential. The success of the study depends on your real responses to the questions. Please read carefully and respond the questions honestly.

Thank you very much for your cooperation!!

Based on the above idea, is there anything you would like to ask me about the survey?

1. The Respondent agreed to be interviewed ⟶ continue with the interview.

2. If the respondent does not agree to be interviewed ⟶ end with thanks

Informed consent

I have read this form or the form has been read to me in the language I understand and I have comprehended the conditions stated above. I am willing to participate in this study.

If you have any question and unclear idea you can contact *Samson Ogayse* by this address:

Phone number: 09 12 65 23 11

Email: ogayse213@gmail.com

Name of supervisor _____signature _____

Name of data collector _____ signature _____

Patient code _____

Individual survey identifications

Complete the information below for each individual approached.

Sub city ___ Woreda/province ___ Health facility name ___ Patient number ____

Interview visits	1	2	3
Date: DD,MM,YYYY			
Result			
Next visit if not completed			

Result: 1. complete, 2. partially complete, 3. Final visits

Section one: demographic and Socio economic characteristics

S. No	**Question**	**Option (Measurements)**	**Skip**
101.	Sex	1. Male 2. Female	
102.	Age	_____ year	
103.	Marital status	1, Single 2. Married 3. Separated 4. Widowed 5.Divorced 6.Others,specify_____	
104.	Educational status?	1. Illiterate 2. Read and write 3. Grade 1-4 4. Grade 5-8 5. Grade 9-12 6. Diploma 7, Degree 8. master and above	
105.	Major/ main occupation for the last 12 month?	1.Unemployed 2, Employed 3. Retired 4, Student 5. House wife 6. Trade 7. Private business 8. Others _____	If 1, 3, 4,5,6 skip to 107

106	If employed, what is type of employment are you engaged in	1. Government employee 2. Private organization employee 3. NGOs employee 4. Others	
107	Role in household	1. Father 3. Child 2. Motherhood 4. _____other	
108	Number of Family members	_____	
109	How many members of the family are employed at moment?	_____	
110	What is your average monthly income??	_____birr	
111	On average how much is the income of the other family members?	_____ birr	

Section two: clinical characteristics of diabetic mellitus and Role of individual

S. No	Question	Option	Skip
201.	**How did you know** that you have diabetic mellitus at first?	1. having DMs examinations 2. having another diseases examination 3. I don't remember	
202	**For how long do you follow up as** the diabetes patient/client?	_____ years	
203	What **type of diabetic case** do you have?	1. Type 1, insulin dependent 2. Type 2, insulin independent 3. I don't know/other _____	
204	**How frequently do you visit** health facility?	_____	

205	During check up, on average, **how long do you wait at reception** to see a doctor?	_____ hours	
206	Most of time when you get sick, **who takes care of you?**	1, Wife 2. mother 3, Husband 4. father 5, Brother 6. sister 7. My daughter 8. my sun 9, Other ____	
207	Do you have taken any **prevention action** to minimize complication?	1. Yes 2. No	**If 2 skip to 209**
208	If yes **Q 208** above, What **type of prevention** does have you taken? How **much does it cost per months?**	1. Control of feeding habit_____birr 2. Regular exercise_____ birr 3. Other _____ birr 4. Total _____ birr	
209	Do you have worries because of your DMs conditions**?**	1. Yes 2. No	**If 2 Skip to 301**
210	If yes in above Q 211, Why do you worries?	1. Illness of the diseases 2. Cost of medication 3. Limited feeding, social interactions 4. Others _____	
211	If yes in Q 211, how much you are affected?	1.Very strongly 2. Strongly 3. medium 4.Fairly 5.Rarely	

Section three Costs of treatment

S. No	Question	**Option**	**Skip**
301	How frequently do you take **regular medications and laboratory test?**	1. _____medication 2. _____Laboratory test	

302	What kinds of medications and laboratory test do you use? What is your single bought or regular medication cost and for how long do you use it?	1.Laboratory tests ____ birr for___time 2.Insulin _____birr for____times 3.Insulin syringes __birr for__times 4.Oralantihyperglycaemicage _____birr for____times 5. Others _____birr for_____times **6. Total average cost __for_ times**	
303	Mainly/regularly from where do you get the medications and other services? **(Chose more than one answers)**	1. Governmental health facility 2. Private health facility 3. NGOs 4. DMs Associations 5. Others _____	
304	In the last 6 months have you got medication from other sources like from relatives?	1. Yes 2. No	If 2 skip to 308
305	What is your other source of medication?	_____	
306	If yes in Q 304, what type of medication do you get?	1. Laboratory tests, _____ 2. Insulin 3. Insulin syringes 4. Oral antihyperglycaemic agents 5. Others _____	
307	If yes in Q above, how much did it cost?	1. _____birr **2.** I don't know	
308	During your regular follow up to health facilities in last 6 months do you use services like **cafeteria?**	1.Yes 2.No	**If 2 skip to 310**
309	If yes in Q 308, how much do **you and your** caregiver **costs in average**?	_____birr	

310	Have you been admitted to hospital/clinics, **inpatient treatment** in the last 6 months?	1.Yes 2.No	**If 2 skip to 313**
311	What type of services do you use?	1. Medication 4. Bed 2. Transport 5. Others specify - 3. Food and drinks	
312	If yes Q 310 above, what was its total cost?	___ birr	
313	What is your financial source for diabetic mellitus medications? **(Choose more answers)**	1. Government free 2. insurance 3. Self 4. Family/relatives 5. Others _____	

Section four: lose of work days

S. No	**Question**	**option**	**Skip**
401	**In last 6 months because of DMs** do you have stopped going to **school/ work** and **stayed home**?	1. Yes 2. No	**If 2 skip to 403**
402	If yes in Q 401, for **how many days** were you absent in last 6 months?	1. ___days from school 2. ___days from work	
403	In the last 6 months how many days did you come to health facilities for following up?	___days	
404	In the last 6 months has **someone come with you for follow up**?	1. Yes 2. No	**If 2 skip to 407**
405	If yes in Q 404, How many caregivers were with you?	_____	
406	If yes in Q 404, how many days in 6 months your caregiver with you?	___ days	

407	Do you had household illness or in care?	1. Yes 2. No	**If 2 skip to 411**
408	If yes in Q above how many days?	_____ days	
409	Is there any one give you **care in house hold** in last 6 months **when you get sick**?	1. Yes 2. No	**If 2 skip to 411**
410	If yes in Q 407, how many days they have had?	_____Days	
411	In last 6 months do you have **had inpatient services**?	1. Yes 2. No	**If 2 skip to 501**
412	If yes in Q 409, for how **many days** do you get services?	_____Days	
413	**Do you have had any one** with you, during your **inpatient services**?	1. Yes 2. No	**If 2 skip to 501**
414	If yes Q 411**, how many caregiver**, **for how many days the stay**? **Consider main caregiver only.**	____ Caregiver _____days	
415	In above Q, for transportation how much an average they cost per day?	_____ Birr	

Section five cost of transportation

S. No	**Question**	**option**	
501	What is the **means of transport** to get to the health facility during your **follow up**?	1. On feet 2. Taxi 3. Bus 4. Self care 5, other _____	
502	How **long does it take to** health facility during follow up?	1, ____ minutes 2, ____ km	
503	How **many trips** do you have had in last 6 months?	_____	

504	What is your **single trip total cost** of transportation?	_____birr	
505	Has anyone from your family/friends **looked after you when you visited hospital**?	1. Yes 2. No	**If 2 skip to 507**
506	If yes in Q 505, what is your **caregiver single trip total transportation cost**?	___ birr	
507	In last 6 months, do you have had an **emergency transport?**	1. Yes 2. No	**If 2 skip to 601**
508	If yes in Q 507, how **many times** do you have had, **how much was average transport costs per single visits?**	1._____times 2._____Birr	

Section six Emergency and inpatient costs

S. No	**Question**	**option**	**Skip**
601.	Did you have **an emergency visit** in the 6 month/ not regular visits?	1. Yes 2. No	**If 2 skip to 701**
602.	If yes in Q 601, **how many times do you visit**, how many **days do you had** during it?	1._____ times 2._____Days	
603	During your **emergency case** from where do get services?	1. Government Hospitals 2. Health centers 3. Private health facilities 4. Others _____	
604	In last 6 months, how much was your **total emergency medication/treatment costs?**	_____Birr	
605	During your emergency visits was **a caregiver with you**?	1. Yes 2. No	
606	If yes in Q 605, **how many caregivers**, for **how many days the stay**, **Consider Only main caregiver**	1. _____ caregiver 2. _____Days	

607	In last 6 months emergency visits, How **much you and your caregiver cost** in other expenditure **like cafeteria and not considered above**?	1._____ birr in 1st visit 2._____Birr in 2nd visits **3._____Birr in total**	

Section seven household budgets

S. No	Question	option	Skip
701.	Specify your household **monthly** main expenditure in birr?	1. Food items ____birr 2. house rent _____birr 3. Transport _____birr 4. Health _____birr 5.Water, mobile cared, electricity _____birr per month 6. Saving _____ birr 7. Other household _____birr	
702	In **last 6 months** which problems do you face from health facilities you visit**, how many days and average extra costs paid**?	1.long waiting for a long time 2.postponing visiting date 3.lack of laboratory and drugs in the facilities 4. others ---------- 5. No problem faced	
703	Do you have any **other comments about the cost of your health care** that you'd like inform me?	_____	

THANK YOU!!!

Annex 3. Questionnaire (Amharic Version)

አዲስ አበባ ዩኒቨርሲቲ

የህብረተሰብ ጤና ሳይንስ ትምህርት ክፍል

ለስኳር ህመም ታካሚዎች የተዘጋጀ መጠየቅ

ውድ ተሳታፊዎች፡

ይህ መጠየቅ የተዘጋጀው ለጥናት አላማ ነው፡፡ የመጠየቁ ዋና አላማ በአዲስ አባባ ከተማ ባሉ ጤና ተቋማት በሚከታተሉ የስኳር ህምምተኞች እና ቤተሰቦቻቸው ላይ የስኳር ህሙም የሚያመጣውን ኢኮኖሚያዊ ጫና ለህብረተሰብ ጤና ድህረ ምርቃ መመረቂያ ማሟያ ለሚሆን ዳሰሳ ጥናት አገልግሎት የሚውል ነው፡፡ ማንኛውም ዓይነት የሚሰጡን መረጃ/ምላሽ በሚስጥር የምንጠብቅ ሲሆን የዚህ ጥናት መሳካት እርሶ በሚሰጡን ትክክለኛ መልስ ላይ የተመሰረተ በመሆኑ እባክዎን ይህንን መጠይቅ በሚገባ ካነበቡ በኃላ በአግባቡ /ትክክለኛውን ምላሽ ይስጡ፡፡

ስለ ትብብርዎት በጣም አመሰግናለሁ!!

ከላይ በተገለፀው ሀሳብ ላይ ማንኛውንም ዓይነት ጥያቄ እኔን ለመጠየቅ ይፈልጋሉ?

1. መላሹ ለቃለመጠይቅ የተስማሙ ከሆነ ⟶ ቃለመጠይቁን መጠየቅ፡፡
2. መላሹ ለቃለመጠይቅ ካልተስማሙ ⟶ አመስግኖ መለያዬት፡፡

መስማማትን ማረጋገጫ

እኔ ይህን ካነበብኩ ወይም በሚገባኝ ቋንቋ ከተነበበልኝ በኃላ ሀሳቡ ከላይ እንደተገለፀው ተረድቻለሁ እና በዚህ ጥናት ለመሳተፍ ፈቃደኛ ነኝ፡፡

ማንኛውን ጥያቄ ያልገባዎት ሀሳብ ካለ **ሳምሶን አጋይሌ** በአድራሻው:

በስልክ ቁጥር 09 12 65 23 11

Email ogayse213@gmail.com መጠይቅ ይችላሉ፡፡

የመረጃ ሰብሳቢ ስም _____ፊርማ _____

የተቆጣጣርው/ዋ ስም _____ ፊርማ _____

በጥናቱ ተሳታፍ ግለሰቦች መለያ **code _____**

ከዚህ ቀጥሎ ያሉትን ለእያንዳንዱ ተጠያቂዎች ይሞሉ

ክፍለ ከተማ _____ ወረዳ _____ የጤና ተቋሙ ስም _____ለተጠያቂ ህመምተኛ የተሰጠ ቁጥር _____

የጠያቂ ጉብኝት	1	2	3
ጊዜ፡ ቀን፣ ወር፣ ዓ.ም			
ውጤት			
መጠይቁ ካላለቀ ሌላ ጉብኝት			

ውጤት: 1. አልቋል 2. በከፊል ያለቀ 3. የመጨረሻ ጉብኝት

ክፍል አንድ: ማህበራዊና እኮኖሚያዊ እና አጠቃላይ የግለሰብ መረጃ

ተ.ቁ	*ጥያቄ*	*አማራጭ*	*እለፍ*
101	ጸታ	1. ወንድ 2. ሴት	
102	ዕድሜ	_____	
103	የጋብቻ ሁኔታ	1. ያላገባ 5. የተፋታ 2. ያገባ/አብሮ የሚኖሩ 6. ሌላ ካለ ይገለፅ_ 3. ተለያይተዉ የሚኖሩ 4. ባል/ሚስት የሞተበት	
104	የትምህርት ሁኔታ	1. ያልተማረ 5. ከ9ኛ-12ኛ ክፍል 2. ማንበብና መጻፍ 6. ዲፕሎማ 3. ከ1ኛ-4ኛ ክፍል 7. ዲግሪ 4. 5ኛ-8ኛ ክፍል 8. ማስተርስና ከዚያ በላይ	

105	ለአለፉት 12 ወራት **ዋና ስራዎ ምንድን** ነዉ?	1. ስራ የሌለዉ 5. የቤት እመቤት 2. ተቀጣሪ 6. ንግድ 3. ጡረተኛ 7. የግል ስራ 4. ተማሪ 8. ሌላ __	መልሶ **1፣3፣4፣5፣6፣7** ከሆነ ወደ ጥያቄ **107** ይሂዱ
106	**ተቀጣሪ ከሆኑ በምን ዓይነት ስራ** ላይ ነው የተሰማሩት?	1. በመንግስት 3. በግል ድርጅት 2. መንግስታዊ ባልሆኑ ድርጅት 4. ሌላ ___	
107	ቤት ውስጥ ያለዎት **ኃላፊነት**?	1. አባት 3. ልጅ 2. እናት 4. ሌላ _	
108	በቤተሰብዎ ዉስጥ የሚገኙ **ሰዎች ብዛት**	_____	
109	በቤተሰብዎ ዉስጥ በአሁኑ ጊዜ **ምን ያህሎዎቹ ስራ አላቸው**?	_____	
110	የእርስዎ **ወርሃዊ ገቢ መጠን** ስንት ነዉ?	_____ብር	
111	**የቤተሰብዎ አጠቃላይ ወርሃዊ** ገቢ መጠን ስንት ነዉ?	_____ብር	

ክፍል ሁለት: የስኳር ህመም ዓይነትና የግለሰቦች ድርሻ

ተ.ቁ	ጥያቄ	አማራጭ	አለፍ
201	**ለመጀመሪያ ጊዜ የስኳር ህመም** እንዳለብዎት ያወቁት እንዴት ነዉ?	1. የስኳር ምርመራ አድርጌ 2. የሌላ ህመም ምርመራ ሳደርግ 3. አላዉቅም	
202	**ለምን ያህል ጊዜ** ነዉ የስኳር ህመም ከትትል ያደረጉት?	_____ዓመት	
203	**ምን አይነት** የስኳር ህመም ነዉ ያለብዎት?	1. ታይፕ 1 2. ታይፕ 2 3. ሌላ__አላዉቅም	
204	**በምን ያህል ጊዜ** ነዉ ለከትትል የሚመጡት?	_____	

205	**በአማካይ** በምን ያህል **ጊዜ/ሰዓት** ነው **ለክትትል ሲመጡ በመጠበቂያው** የሚጠብቁት **ሀኪም ፊት** ለመቅረብ?	_____ ሰዓት	
206	ህመም ሲያጋጥሞት እና መስራት በማይችሉበት ጊዜ ማነዉ **ድጋፍ የሚያደርግሎት?**	1. ሚስት 6. እህት 2. እናት 7. ሴት ልጅ 3. ባል 8. ወንድ ልጅ 4. አባት 9. ሌላ ------- 5. ወንድም	
207	**የስኳር ህመሞ እንዳይባባስ** የሚወስዱት ወይም የሚሰሩት **የመከላከል ተግባር** አለ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **209** ይሂዱ
208	ከላይ በቀረበው ጥያቄ መልሶ **አዎ ከሆነ፣ ምን ዓይነት ተግባር** ነው የሚያከናውኑት? **ለዚህ ምን ያህል ወጪ በወር** ያወጣሉ?	1. አመጋገብ ማስተካከል _____ብር 2. የአካል እንቅስቃሴ_____ብር 3. ሌላ ካለ ---- _____ ብር 4. ድምር _____ ብር	
209	ከስኳር ህመሞ ጋር በተያያዘ **ሀሳብ/ጫና/ጭንቀት አሎት?**	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **301** ይሂዱ
210	ከስኳር ህመሞ ጋር በተያያዘ **ምንድነው ጭንቀቶዎት ስሜቶዎን የሚጎዳው/የሚነካው፣ የሚያሳስቦት ነገር ምንጭ?** **(ከአንድ በላይ መልስ ይቻላል)**	1. የበሽታው ህመም 2. የህክምና ወጪ 3. መወሰን በአመጋገቦ፤ እርበርስ ግንኙነት 4. ሌላ ካለ _____	
211	ከላይ በቀረበዉ ጥያቄ **መልስዎ አዎ ከሆነ ምን ያህል ነዉ ጫናው?**	1. በጣም ከፍተኛ 4. መጠነኛ 2. ከፍተኛ 5. አነስተኛ 3. መካከለኛ	

ክፍል ሶስት: የስኳር ህክምና ወጪ

ተ.ቁ	*ጥያቄ*	*አማራጭ*	*አለፍ*
301	**በየምን ያህል ጊዜ ነው መድሀኒት እና ላቦራቶሪ ምርመራ** የሚወስዱት?	1. ____የህክምና መድሃኒት 2. ____ምርመራ/ላቦራቶሪ ቴሲቲ	

302	**ምን ዓይነት** ህክምና ነው የሚወስዱት፤ **የአንድ ጊዜ /ህክምና ወጪዎት** ምን ያህል ነው፣ **ለምን ያህል ጊዜ ነው** የሚጠቀሙት?	1. የላቦራቶሪ ምርመራ ___ብር_____ጊዜ 2. ኢኒሱሊን_____ብር_____ጊዜ 3. የኢኒሱሊን ሲርንጂ____ብር_____ጊዜ 4. በአፍ የሚወሰድ መድሃኒት__ብር__ጊዜ 5. ሌላ ካለ_____ ፤ _____ብር_____ጊዜ **6. በአጠቃላይ _____ ብር ____ለጊዜ**	
303	**ብዙ ጊዜ/በአብዘኛው ጊዜ ከየት ነው** የስኳር ህክምና አገልግሎቶችን የሚያገኙት**?**	1. ከመንግስት ጤና ተቋም 2. ከግል ጤና ተቋም 3. መንግስታዊ ካልሆነ ተቋም 4. ከማህበር/ከስኳር 5. ከሌላ ቦታ _____	
304	ባለፉት 6 ወራት **የህክምና ቁሳቁስ/መድሃኒት አገልግሎት ከሌላ ቦታ ለምሳሌ ከዘመድ/ ከውጪ አገር አግኝተዉ** ያዉቃሉ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **308** ይሂዱ
305	ከሌላ ቦታ **ከየት ነው** የህክምና ድጋፍ ያገኙት**?**	_____	
306	በጥያቄ ቁጥር 304 መልሶ አዎ ከሆነ **ምን ዓይነት** ድጋፍ**?**	1. የላቦራቶሪ ምርመራ/ስኳር መመሪመሪያ _ 2. ኢኒሱሊን 3. የኢኒሱሊን ሲርንጂ 4. በአፍ የሚወሰድ መድሃኒት 5. ሌላ ካለ_____	
307	ከላይ በቀረበዉ ጥያቄ መልስ አዎ ከሆነ **ምን ያህል ዋጋ ነበረዉ?**	1. _____ ብር 2. አላውቀውም	
308	ባለፉት **6 ወር** ለክትትል ጤና ተቋም በሚመላለሱበት ወቅት **ለምግብና ለመስተንግዶ ነገሮች ወጪ አውጥተው ነበር?**	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **310** ይሂዱ
309	መልሶ አዎ ከሆነ ምን ያህል ወጪ ነበረ ያወጣችሁት **እርሶና አብሮት** የነበረው ሰው **በአማካይ በአንድ ደርሶ መልስ** ጉብኝት	1. _____ብር	
310	ባለፉት **6 ወራት** በሆስፒታል/በክሊኒክ **ተኝተዉ ታክመዉ** ነበር?	1.አዎ 2.አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **313** ይሂዱ
311	መልሶ አዎ ከሆነ **ምን ዓይነት አገልግሎት** ተጠቀሙ? **(ከአንድ በላይ መልስ ይቻላል)**	1. የህክምና 2. የትራንስፖርት 3. የምግብ 4. የአልጋ 5. ሌሎችን_____	

312	**ለነዚህ** አገልግሎቶች **በአጠቃላይ ምን ያህል ወጪ** አወጡ?	1. _____ብር	
313	ለስኳር ህክምና **ዋና የገንዘብ ምንጭዎት** ከየት ነዉ? **(ከአንድ በላይ መልስ ይቻላል)**	1. ነፃ ህክምና 2. ኢንሹራንስ 3. ከግል ኪስ ወጪ 4. ከቤተሰብ/ከጓደኞች 5. ሌላ የወጪ ምንጭ ይጠቀስ----------	

ክፍል አራት: ለህክምና የዋሉ ቀናት

ተ.ቁ	*ጥያቄ*	*አማራጭ*	*አለፍ*
401	ባለፊት **6 ወራት** ከስኳር ህመም ጋር በተያያዘ **ት/ቤት ወይም ስራ** ሳይሄዱ **ቤት ውስጥ** የቀሩበት ቀናት ነበርዎት?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **403** ይሂዱ
402	በጥያቄ ቁጥር 401 መልሶ **አዎ** ከሆነ **በአጠቃላይ ባለፉት 6 ወራት** ምን ያህል ቀን ቀሩ **ከት/ቤት ወይም ከስራ**?	1. ---------- ቀናት ከት/ቤት 2. ---------- ቀናት ከስራ	
403	ባለፉት **6 ወራት** እርሶ **ለክትትል ወደ ጤና ተቋም ሲመጡ** ምን ያህል **ቀናትን ተጠቀሙ**?	---------- ቀን	
404	ባለፉት **6 ወራት ከእርሶ ጋር ጤና ተቋም** የሚመጡ **ሰዎች ወይም አስታማሚዎች** ነበርዎት?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **407** ይሂዱ
405	መልሶ **አዎ** ከሆነ ከእርሶ ጋር ጤና ተቋም **የሚመጡ ሰዎች ወይም አስታማሚዎች ቁጥራቸዉ** ስንት ነው**?**	----------	
406	መልሶ **አዎ** ከሆነ ከእርሶ ጋር ጤና ተቋም የሚመጡ **ሰዎች ወይም አስታማሚዎች ምን ያህል ቀናትን መጡ?**	_____ቀናትን	
407	**ባለፈው 6 ወር ቤት ውስጥ ተኝተው/ከአቅም በላይ ሆኖቦዎት** ያውቃል?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **411** ይሂዱ
408	**መልሶ አዎ** ከሆነ ባለፉት **6 ወራት ምን ያህል ቀን ይሆናል?**	_____ ቀን	
409	**ባለፈው 6 ወር ቤት ውስጥ ተኝተው/ከአቅም በላይ ሆኖቦዎት** ድጋፍና እንክበካቤ የሚያደርግልዎት ሰው ነበረ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **411** ይሂዱ

410	**በጥያቄ ቁጥር 407 መልሶ አዎ** ከሆነ **ምን ያህል ቀን እንክብካቤ ተደረገልዎት?**	_____ ቀን	
411	**ባለፊት 6 ወራት** በጤና ተቋም **ተኝተው ታክመው** ነበሩ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **501** ይሂዱ
412	መልሶ **አዎ** ከሆነ ለምን ያህል **ቀን ነበር** የተኙት?	_____ ቀን	
413	**ተኝተው ሲታከሙ** ከእርሶ ጋር **አስታማሚ ነበርዎት**?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **501** ይሂዱ
414	በጥያቄ ቁጥር **411** መልሶ **አዎ** ከሆነ ምን **ያህል አስታማሚ፤** ለምን **ያህል ቀን** ከእርሶ ጋር ነበሩ?	1. ___ አስታማሚ 2. ___ ቀን	
415	**ከላይ ባለው ጥያቄ አስታማሚዎት በቀን ለመጓጓዣ** በአማካይ ስንት ብር ነበር የሚያወጡት?	_____ ብር	

ክፍል አምስት: የመጓጓዣ ወጪ

ተ.ቁ	***ጥያቄ***	***አማራጭ***	***እለፍ***
501	**ክትትል ወደ ሚያደረጉበት** የጤና ተቋም ለመሄድ **ምን አይነት የመጓጓዣ ዘዴ** ይጠቀማሉ?	1. እግር 2. ታክስ 3. አውቶቢስ 4. በግል መኪና 5. ሌላ ዘዴ ይጠቀስ ----------	
502	**ክትትል ወደ ሚያደረጉበት** የጤና ተቋም **ለመድረስ በአማካይ ምን ያህል ጊዜ** ይፈጅብዎታል **ርቀቱስ** ምን ያህል ነው?	1. _____ደቂቃ 2. _____ኪ.ሜ	
503	ባለፉት **6 ወራት** ለክትትል ምን ያህል **የደርሶ መልስ ጉዞ** አደረጉ?	_____	
504	የአንድ ጉዞ **ደርሶ መልስ የመጓጓዣ ወጪዎት** ምን ያህል ነው?	_____ብር	
505	ለክትትል ሲመጡ **ከእርሶ ጋር ወደ ጤና ተቋም የሚመጣ** ሰው አለ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **507** ይሂዱ
506	የእርሶ **ድጋፍ ሰጪ** ሰው **ደርሶ መልስ የመጓጓዣ ወጪው** ስንት ነው? **(በመጀመሪያ ካልተጠቀሰ ድጋፍ የሚድርግሎት ሰው ወጪ)**	_____ብር	

507	ባለፉት **6 ወራት ለድንገተኛ ህክምና የመጓጓዣ አገልግሎት** ተጠቅመው ነበሩ?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **601** ይሂዱ
508	መልሶ አዎ ከሆነ **ባለፉት 6 ወራት ምን ያህል ጊዜ ድንገተኛ ህክምና** አደረጉ፤ **የአንድ ጊዜ የጉዞ አማካይ ወጪዎ** ምን ያህል ነበር?	1. _____ ጊዜ 2. _____የአንድ ጉዞ ወጪ ብር	

ክፍል ስድስት: ድንገተኛ ህክምና ወጪ

ተ.ቁ	ጥያቄ	አማራጭ	Skip
601	**ባለፉት 6 ወራት** ከስኳር ህመም ጋር የሚገናኝ **ድንገተኛ ህመም ሊጋጥሞት ነበር?**	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **701** ይሂዱ
602	ከላይ በቀረበዉ ጥያቄ መልስዎ አዎ ከሆነ **በ6 ወር ምን ያህል ጊዜ**፤ በአጠቃላይ **ምን ያህል ቀን ወሰደቦዎት?**	1. _____ ጊዜ 2. ---------- ቀን	
603	**በድንገተኛ ህመሞ** ጊዜ ከየት ነበረ **ህክምና አገልግሎት ያገኙት?**	1. ከመንግስት ሆሲፒታል 2. ከጤና ጣቢያ 3. ከግል ጤና ተቋማት 4. ሌላ _____	
604	ባለፉት **6 ወራት አጠቃላይ የድንገተኛ ህክምና** ወጪዎት ምን ያህል ነበረ?	_____ብር	
605	**ባለፉት 6 ወር በድንገተኛ ህመሞ ጊዜ ድጋፍ የሚያደረግልዎት** አስታማሚ ነበርዎት?	1. አዎ 2. አይ	መልሶ **2** ከሆነ ወደ ጥያቄ **701** ይሂዱ
606	መልሶ አዎ ከሆነ ምን ያህል **ድጋፍ ሰጪ ነበርዎት**፤ ምን **ያህል ቀን ቆዩ**፤ በአማካይ **ምን ያህል ደሞዝ/ገቢ** አወጣ?	1. _____ ድጋፍሰጪ/አስታማም 2. _____ቀን	
607	ባለፉት **6 ወር በድንገተኛ ህመም ምክንያት እርሶና አስታማሚዎ ለተለያዩ** እንደ ምግብ፣ ሻይ፣ ቡና ላሉ ነገሮች ምን ያህል ወጪ አወጡ? **(ከላይ ላልተዘረዘሩ ነገሮች)**	1. _____ብር በመጀመሪያ ዙር 2. _____ብር ሁለተኛ ዙር **3. _____ብር በአጠቃላይ**	

ክፍል ሰባት: በስኳር ህክምና ተፅዕኖ የሚፈጥሩ እና የቤተሰብ ወጪዎች

ተ.ቁ	*ጥያቄ*	*አማራጭ*	*Skip*
701	ዋና ዋና የቤትዎ የወር ወጪዎችን ይጥቀሱ?	1. ለምግብ _____ ብር 2. ለቤት ኪራይ ___ ብር 3. ለማጓጓዣ _____ ብር 4. ለጤና ህክምና __ ብር 5. ዉሃ፣ ስልክ/ሞባይል ካርድ፣ ሙቢራት _____ ብር 6. ቁጠባ _____ ብር 7. ሌላ _____ ብር	
702	ባለፉት **6 ወራት** ከትትል ከሚያደረጉት ህክምና ተቋም **የትኞቹ ችግር ነበሩ በዚህ ምክንያት ምን ያህል ተጨማሪ ወጪ አወጡ**? **(ከአንድ በላይ መልስ ይቻላል)**	1. ረዥም ሰዓት ማስጠበቅ _____ ሰዓት _____ብር 2. የቀጠሮ ቀን ማስተላለፍ_____ ቀን_____ብር 3. የህክምና/ መድሃኒት እጥረት_____ቀን_____ብር 4. ሌላ ካለ ይገለጽ _____ቀን _____ብር 5. ችግር አላጋጠመኝም	
703	**ስለህክምናዎ ወጪው መጠየቅ** የሚፈልጉት ወይም **መናገር የሚፈልጉት** ሀሳብ ካሎት?	_____	

አመሰግናለሁ!!