

Assessment of the Financial Status in Adult Diabetic Patients Attending the Diabetic Clinic in Bankura Sammilani Medical College, Bankura

Indu Padmey¹, Karan Jain², Arindam De³, Abhishek Joshi⁴

¹Assistant Professor, SSIMS, Junwani, Bhilai, Durg, ²Tutor Dept. of Community Medicine Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur, ³District Tuberculosis Officer (DTO), Purba Bardhaman, ⁴Associate Professor Dept. of Community Medicine Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Warha

Abstract

Introduction: Diabetes and its complications impose significant economic consequences on individuals, families, health systems and countries. People living with diabetes and their families feel the impact of diabetes most directly, often through the expenses of diabetes treatment and loss of family income when diabetes interferes with work.

Objective: To assess the financial status of adult diabetic patients attending the diabetic clinic of Bankura Sammilani Medical College, Bankura.

Materials and Method: It is an Institution based, Cross-sectional, descriptive Study. Complete enumeration of all patients attending Diabetic clinic of Bankura Sammilani Medical College and hospital, Bankura, West Bengal was done. Eligible consenting of adult patients (> 18 years of age) who were diagnosed as a case of diabetes at least 1 year back and on treatment were interviewed with review of medical record and Out-of pocket expenditure information was collected in terms of INR. It views the cost of NCDs as the sum of several categories of direct and indirect costs. The study was preceded after obtaining ethical clearance. Data were entered in MS Excel spread sheet. Calculation was done with the help of software SPSS 22.0 free version.

Results: Majority of annual treatment expenses of study subjects were in Drugs and consumables (66.73%) followed by Investigation cost 15.19% and others. The average INR for annual total diabetes care was 13,733.17±13,389.86.

Conclusion: Drugs and consumables, investigation and transportation cost leads to more than 90.0% of out-of pocket expenditure causing financial burden on both adult diabetic patient and its family.

Keywords: Adult diabetic, direct cost, indirect cost, out-of pocket expenditure.

Introduction

All types of diabetes are on the increase, type

2 diabetes in particular: the number of people with diabetes will increase by 55% by 2035. In human as well as financial terms, the burden of diabetes is enormous, provoking 5.1 million deaths and taking up some USD 548 billion dollars in health spending (11% of the total spent worldwide) in 2013. In India the total number of diabetic population in 2013 is 65.10 millions and estimated around 109.00 millions in 2035 (20-79 years)¹.

Diabetes affects all segments of the population and

Corresponding Author:

Mr. Karan Jain

Tutor Dept. of Community Medicine Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur

e-mail: magicofkaran@gmail.com

is one of the leading causes of premature morbidity and mortality, and requires life-long healthcare services. Poverty, low education, and gender discrimination adversely affect women with diabetes. About 90% of all respondents did not test their blood glucose regularly and suffered from several complications with low medication adherence and poor clinic attendance. Information on the availability, cost, and quality of medical care for diabetes is generally not available².

Diabetes and its complications impose significant economic consequences on individuals, families, health systems and countries³. People living with diabetes and their families feel the impact of diabetes most directly, often through the expenses of diabetes treatment and loss of family income when diabetes interferes with work⁴.

Besides the health expenditures, other measurements have also been used to assess the economic impact of diabetes. First, diabetes also imposes a large financial burden on people with diabetes and their families. The size of this burden depends on their economic status and the social insurance policies of the countries in which they live. Second, at the societal level, diabetes leads to loss in productivity and economic growth. Finally, the largest economic burden caused by diabetes is the monetary value associated with disability and loss of life as a result of the disease itself and its related complications, including heart, kidney, eye and foot disease⁵.

The National Rural Health Mission⁶ (NRHM) launched in 2005 and the new pilot National Programme for prevention and control of Diabetes, Cardiovascular diseases and Stroke⁷ (NPDCS) offer opportunities for improving care for diabetes and other non-communicable diseases through service provision at the primary and secondary levels of care.

Availability and affordability of anti-diabetic medication is another problematic aspect, in spite of "The National List of Essential Medicines" identifying glibenclamide, metformin, and insulin (soluble and lente) as anti-diabetic drugs that need to be available universally⁸. The availability of glibenclamide in public health facilities, for example, varied from 100 percent in Karnataka to 3.8 percent in West Bengal⁹. Given the uncertainty of availability of medicines, and the lack of pricing control over the private sector, compliance with medication becomes a serious issue¹⁰⁻¹⁴.

Materials and Method

An Institution based, Cross-sectional, descriptive Study was done in Diabetic Clinic of Bankura Sammilani Medical College and hospital, Bankura, West Bengal which runs once in a week on every Thursday and approximately 20 to 30 patients attend the OPD day per week. Total duration of study was of 20 months from May 2014 to December 2015. Patients who were diagnosed as a case of diabetes in private clinic or other department of the B.S.M.C and hospital and/or on treatment on anti-diabetic drugs were enrolled as a new patient on first visit of the patient in Diabetic Clinic. Adult patients (> 18 years of age) attending Diabetic clinic and who were diagnosed as a case of diabetes at least 1 year back and was on treatment are study subjects. All eligible patients who give informed or verbal consent attending the Diabetic clinic are taken in the study during data collection period. On an average of 5-6 patients were newly enrolled in register per week on Diabetic clinic. During the data collection period all eligible patients attending the diabetic clinic, were taken as study population and 150 study subjects were taken. The study was proceeded after obtaining ethical clearance from the institutional ethics committee and Diabetic clinic under Medicine Department. Pretesting of Schedule was done in 20 patients attending medicine OPD and were excluded from the final data collection. Any difficulty that arose during pretesting was corrected in the final questionnaires.

Result

84.0% of subjects did not have to pay for annual Consultation charges. 16.0% of subjects had to pay for Consultation charges at private clinic. Even 2.7% of them had to pay INR of $\geq 2000/-$. The Mean INR for annual consultation charges was 221.61 ± 593.65 with arange of 0.00-3500/-INR.

Majority of the subjects (43.3%) had to pay 1000-2000 rupees every year for investigations (outdoor annually) due to diabetes and associated conditions. The Mean INR for annual investigation cost was $1972.33 \pm 1788.43/-$ with a range of 0-12000/-INR.

One fourth of study subjects had to (27.3%) pay for more than 10,000 rupees in a year for Drugs and Consumables(outdoor annually). The Mean INR for annual cost on Drugs and Consumables was $8931.93 \pm 10554.39/-$ and a range of INR for annual cost on Drugs and Consumables was 0-96000/-.

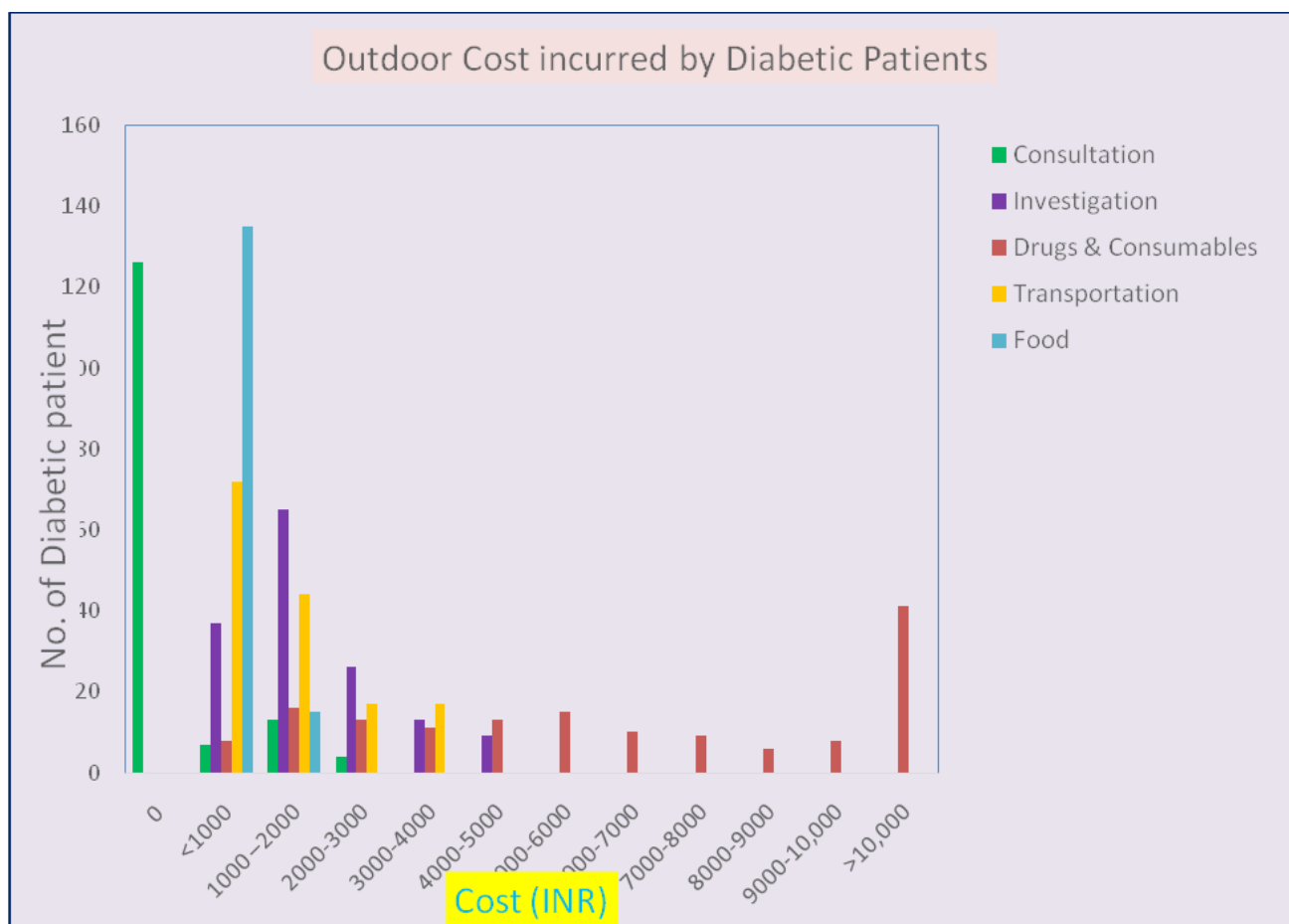


Figure 1: Distribution of study subjects according to annual expenditure on different outdoor cost by Adult Diabetic Patient (n=150)

Table No. 1: Distribution of study subjects according to Total annual cost (outdoor) (n=150)

Treatment	Outdoor Cost (INR)	Indoor Cost (INR)	Total Cost (INR)	Percentage
Doctor Consultation cost	33,020/-	0.0	33,020/-	1.59
Investigation cost	2,95,850/-	19,250/-	315100/-	15.19
Drugs and consumables cost	13,39,790/-	43,670/-	1383460/-	66.73
Transportation cost	2,42,676/-	20,870/-	2,63,546/-	12.72
Food cost	59,220/-	17,990/-	77,210/-	3.72
Surgical cost	0.0	1000/-	1000/-	0.05
Total cost	19,70,556/-	1,02,780	20,73,336/-	100.0

Majority of annual treatment expenses of study subjects were in Drugs and consumables (66.73%) followed by Investigation cost 15.19%, Transportation cost 12.72%, Food cost was 3.72% and least by

Consultation cost was 1.59%. The mean INR for annual total diabetes cost was 13,733.17±13,389.86/-, the median INR was 10,520.00±9,682.50/- and the range of INR for annual total diabetes cost was 520-1,21,200/-.

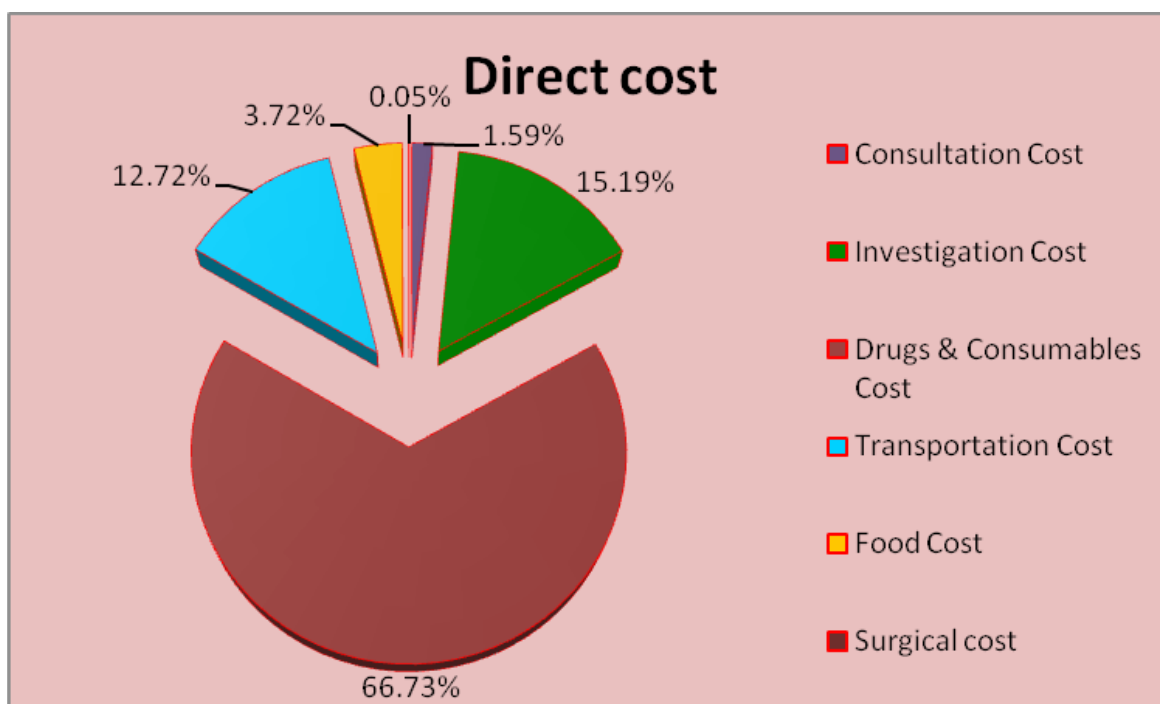


Figure 2. Distribution of study subjects according to Total Direct cost (n=150)

Majority of treatment expenses were in Drugs and consumables followed by Investigation cost 15.01% and then Transportation cost was 12.31%. Only 10.0% of subjects were hospitalised during the last one year for diabetes associated complications. According to duration of stay in hospital, 66.7% of subjects were admitted to hospital for 1-7 days in the last one year.

Table No. 2: Distribution of study subjects according to Total Hospital admission cost in last one year (n=15)

Treatment	Cost (INR)	Percentage
Investigation cost	19,250/-	18.72
Drugs and consumables cost	43,670/-	42.48
Transportation cost	20,870/-	20.30
Food cost	17,990/-	17.50
Surgical cost	1,000/-	1.0
Total cost	1,02,780/-	100.0

During hospitalization due to diabetes and associated complication, 42.48% of cost was spend on Drugs and Consumables followed by 20.30% in transportation and 18.72% for investigation and 17.50% for Food cost. The mean INR for hospitalization due to diabetes and its complication was 643.33±2411.06/-, the Range of INR for hospitalization was 0.0 -17,000/-.

Majority of 58.67% subjects had Man days lost of them and their companions in last one year. Total Man days lost of them and their companions in last one year was 1538 days. Mean of Man days lost of them and their companions in last one year was 17.48±11.79 days. Range of Man days lost of them and their companions was 4-72 days. Majority of subjects had loss of more than 2,000 rupees in last one year from Wages of them and their companions due to diabetes. Total INR wages lost of study subjects and their companions annually was 1,30,750/-. Mean INR wages lost by study subjects and their companions annually was 2,563.73±2,792.59/. Range of INR for wages lost of study subjects and their companions annually was 240-18000/-.

Table No. 3: Distribution of adult diabetic patients according to Total Direct Cost and diabetic complications (n=150)

Cost	Variables	N	Median±IQR	Mean rank	Mann-Whitney U Test (p value)	
Total Direct cost (INR)	Diabetic Complications	Present	51	10,200.0±9,760	74.15	2455.5 (0.784)
		Absent	99	10,600.0±10,570	76.20	
	Comorbid conditions	Present	98	10,300.0±10850	73.81	2382.5 (0.513)
		Absent	52	11,212.0±33180	78.68	
	Absenteeism	Present	51	10,320.0±10445	76.45	2644.0 (0.749)
		Absent	99	10,840.0±9810	74.15	

The median score of Total cost was less when Diabetic complications was present than when it was absent and the difference was statistically not significant ($p > 0.05$). The median score of Total cost was less when Comorbid conditions was present than when it was absent and the difference was statistically not significant ($p > 0.05$). The median score of Total cost was less when Absenteeism was present than when it was absent and the difference was statistically not significant ($p > 0.05$).

Discussion

In this study 150 adult diabetic patients attending the diabetic clinic were interviewed along with review of medical records. In this study physical assessment was done by comparing with diabetes complication, comorbid conditions and financial assessment of annual expenditure was done by collecting data of recent three months expenditure on diabetes care by the study subjects for both direct and indirect costs. Physical and financial status association was seen with socio-demographic characteristics and health services related factors, utilization of health facilities and among themselves also.

Proportion of female (51.3%) was more than male (48.7%) in present study and similar finding was found in study done in Saudi Arabia¹⁷.

In present study the mean age of female was 50.00±12.69 years and the mean age of male was 52.40±12.64 years whereas the overall mean age of the participants was 54 ± 12 years in a study conducted in Oman¹⁸.

In present study 80.6% of study subjects had good drug compliance whereas 19.4% had poor drug compliance whereas a multicentric study in India,

revealed 79.4% were compliant with their medication¹⁹. But other studies revealed poor drug compliance^{20-23, 9}.

79.3% of study subjects skipped the drug when it was finished. Only 5.3% of study subjects had supply of drug from hospital fully but rest of them had to buy the drug from the shop. 50.0% had to buy all the antidiabetic drugs from the shop and 44.7% were dependent both on shop and hospital for anti-diabetic drug. 52.0% of study subjects had irregular supply of drug from hospital whereas 48.0% of subjects had regular supply of drugs.

Diabetes was diagnosed in 6.0% of study subjects below 20 years of age. The proportion of diagnosed case of diabetes increased up to 50 years of age and then decreased. The Mean age of diagnosis of diabetes was 45.92±13.58 years in study subjects, Median age of diagnosis was 47.0±21.0 years and Range was from 14-87.5 years. In Diab-Care Asia, a multi-country study in Asia, the mean age of diagnosis among Indian respondents was 43.6 years²⁴.

Majority of study subjects attending the diabetic clinic had 1-5.99 years (67.3%) of duration of diabetes and only 13.3% of subjects had more than 11 years of duration of diabetes. In present study Median year of duration of diabetes was 3.0 (1-32) years whereas a study in Oman showed a median year of duration of diabetes was 7 (4-10) years²⁵.

Majority of annual treatment expenses of study subjects were in Drugs and consumables (66.73%) followed by Investigation cost 15.19%, Transportation cost 12.72%, Food cost 3.72% and Consultation cost was least at 1.59%. In present study drug costs accounted for more than half of the total direct costs which was similar to other studies conducted in India²⁶⁻³³.

Conclusion

Antidiabetic drug were not regularly available in hospital so all most all had to purchase drug from the shop when not available at hospital.

Drugs and consumables, investigation and transportation cost leads to more than 90.0% of out-of-pocket expenditure in both in-door and out-door care causing financial burden on both adult diabetic patient and its family. Majority of study subjects had Man days lost of them and their companions in last one year was approximately 4 years.

Total INR wages lost of study subjects and their companions annually was also a financial constraint for follow-up of hospital by subject.

Ethical Clearance: Taken from institutional ethics committee.

Source of Funding: Self.

Conflict of Interest: Nil.

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