

Health Care Seeking Pattern of Diabetic Patients in A Selected Rural Community

Chinmoy Baidya^{1*} Bipul Krishna Chanda² Moynal Hosssain³ Sharmi Shaha⁴ Farhana Sultana⁵ Sanhita Das⁵

ABSTRACT

Background: Diabetes is an important public health problem, one of four priority Non-Communicable Diseases (NCDs) targeted for action by world leaders. Both the number of cases and prevalence of diabetes have been steadily increasing over the past few decades. To reduce avoidable mortality from diabetes and improve outcomes, it is necessary to insight into the total picture of health care. This baseline study is to determine the current status of intervention being operated for control of Diabetes Mellitus (DM).

Material and methods: This cross sectional descriptive study was conducted among the type 2 diabetic patients at selected rural communities of Chattogram during January to December 2016 aiming to assess the healthcare seeking pattern. By using convenience sampling technique, data were collected by pretested semi-structured questionnaire by face to face interview method. The sample size was 250. Data were analyzed using SPSS version 20.

Results: Mean (\pm SD) age was 52.08 (\pm 10.409) years. Female respondents (62.8%) were predominant. Most of the respondents were Muslims (78%) and married (86.4%). Majority (38.8%) had primary level of education. Average monthly family income of respondents was 9732.00 taka. Most of them (70.8%) had no family history of diabetes. Majority (99.6%) of them did not practice calculated calorie based diet. Majority (87.2%) of the respondents had been detected diabetes by physician. They were suffering from diabetes for 5.58(\pm 3.064) years. In this study, 75.6% of the respondents received diabetic health care from allopathy or MBBS doctor. Among them 56.6% were attached to Govt. health care center keeping in mind about cost, availability, choice of specific doctor, facility and environment. There was significant association of health care seeking pattern with age and monthly family income of the respondents ($p < 0.05$).

Conclusion: There is a urgent need for increasing the awareness of diabetes management in primary healthcare sector. Continuing education on diabetes accompanied by regular assessment of knowledge is crucial. Appropriate planning and policy, more skilled professionals, inter-sectoral coordination and adequate intervention are needed to combat diabetes in future.

Key words: Health care seeking pattern; Rural area; Type 2 diabetes.

Introduction

Diabetes is a serious, chronic disease that occurs either when the pancreas does not produce enough insulin (A hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces. Diabetes is an important public health problem, one of four priority Non-Communicable Diseases (NCDs) targeted for action by world leaders. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades.

1. Assistant Professor of Community Medicine
Chattogram Maa-O-Shishu Hospital Medical College, Chattogram.
2. Professor of Community Medicine (Retired)
NIPSOM, Dhaka.
3. Associate Professor of Community Medicine
BGC Trust Medical College, Chattogram.
4. Project Manager
Sajida Foundation, Chattogram.
5. Physician and Data Collector
Chattogram.

*Correspondence: **Dr. Chinmoy Baidya**
Cell: +88 01818 17 34 44
Email: chinmoy.baidya@yahoo.com

Submitted on : 10th October 2020
Accepted on : 21st November 2020

In 2012, there were 1.5 million deaths worldwide directly caused by diabetes. It was the eighth leading cause of death among both sexes and the fifth leading cause of death in women in 2012. The total burden of deaths from high blood glucose in 2012 has been estimated to amount to 3.7 million¹. This number includes 1.5 million diabetes deaths, and an additional 2.2 million deaths from cardiovascular diseases, chronic kidney disease, and tuberculosis related to higher-than-optimal blood glucose. Its magnitude highlights that high blood glucose causes a large burden of mortality beyond those deaths directly caused by diabetes. The burden of diabetes is increasing globally, particularly in developing countries. There were 7.1 million diabetic patients in Bangladesh in 2015². Diabetic patients in rural area has limitation in receiving quality care. First, rural patient may be less willing to seek medical care for chronic conditions, either because of their cultural attitudes or inability to pay for care & medications. Second, there are fewer physicians in rural areas. Third, the relative lack of specialists in rural areas may make difficult to get some specialized services to patient if they need. Fourth, knowledge about advances in diabetic care may diffuse more slowly to rural areas. However diabetes is also a disease where treatment makes difference. Good quality care and adherence to generally accepted standards results in better outcomes and longer life.

The incidence of Type 2 Diabetes Mellitus (DM) is increasing worldwide, mostly affecting people in developing countries in Asia with the prevalence of 8.6%². The incidence is related to urbanization with longevity and changes of lifestyle, from a traditional active way of life to a modern sedentary style with unhealthy diets and obesity, combined with genetic susceptibility development. Many are unaware of the disease and the healthcare system receives people at the hospitals with DM at very late stages when they have unknowingly had the disease for years. Therefore, the number of people with diabetes registered in hospitals is not an indicator of the real disease burden in the community. DM is a chronic, progressive disease with micro and macro-vascular complications (affecting eye, kidney, lower extremity, heart) likely to develop over time in relation to glycaemic control³.

Health services in Bangladesh are provided by the public and private sector. The healthcare infrastructure under the DGHS comprises six tiers: national, divisional, district, Upazila (Sub-district) union, and ward. At the national level, there are institutions both for public health functions as well as for postgraduate medical education/training and specialized treatment to patients⁴.

Services are of minimum charge with the exception of private wings. The private system includes private not for profit organizations and private health practitioners which charge user fees. Also the traditional and complementary medicine practitioners (e.g Traditional healers, herbalists etc.) can be found but are not fully integrated in the health care system. Diabetes care in Bangladesh is run within the public and private healthcare system. Out-patient care have been developed in some diabetes clinics.

Limited information has been found about health care seeking behaviour among patients with DM, and none focusing primarily on developing countries. The relation between treatment-seeking behaviour and compliance of diabetic patients in a rural area showed that both government and private clinics were used by a large proportion of patients. A switch between these two sectors might interrupt their glycaemic control and negatively affect health. Thus, it is important to explore where patients seek healthcare the first and second time, and the reason why they go for help. This study or baseline survey to determine the current status of intervention being operated for control of Diabetes mellitus in rural areas and to make future plan of action to be taken to reduce morbidity and mortality of diabetic patients due to this illness.

Material and methods

The study was a cross sectional study. The health care seeking pattern of diabetic patients in a selected community was assessed. The study was conducted among the type 2 diabetic patients from 1st January 2016 to 31st December 2016 in villages named Horarbag, Shakpura, Kodhurkhil under Boalkhali thana under Chattogram district, Bangladesh, who were selected conveniently. Diagnosed

type 2 diabetic patients were included for study. Type 1 diabetic patients, patients not willing to participate and mentally retarded or seriously ill patients were excluded from the study. The sample size was 250. Data were collected by face to face interview method using a pretested mixed questionnaire and convenience sampling technique was followed. Then, data were analyzed with the help of SPSS Version 20 software.

Results

Regarding socio-demographic status of the respondents, majority of the respondents i.e. 93 (37.2%) were within 41 to 50 years age group, 76 (30.4%) were within 51 to 60 years and 36 (14.4%) were within 61 to 70 years, 31 (12.4%) were within 31 to 40 years and 13 (5.2%) were within 71 to 80 years and rest 1 (4%) were within 81 to 90 years age group. Here mean (\pm SD) age was 52.08 (\pm 10.409) years. Female (62.8%) were predominant than male (37.2%). Majority respondents 195 (78%) were practicing Islam, 50 (20%) were practicing Sanatan and 5 (2%) were practicing Buddhism. Majority 216 (86.4%) respondents were married, 33 (13.2%) were widow and 1 (0.4%) was divorced. Among 250 respondents, majority 97 (38.8%) had primary education, 93 (37.2%) had secondary education, 38 (15.2%) had higher secondary education. 13 (5.2%) were illiterate, while 9 (3.6%) were graduate. In context of occupation, 112 (44.8%) were housewife, 46 (18.4%) were in agriculture, 34 (13.6%) were in business, 31 (12.4%) were in other different occupation. 26 (10.4%) respondents were service holder while 1 (0.4%) was day laborer. Less than 10000 taka income group was maximum (78.4%) followed by 50 (20.0%) respondents earning 10001 to 20000 taka. In this study mean (\pm SD) income was 9732.00 (\pm 5183.788) taka [Table I].

Figure 1 illustrates the family history of diabetes where 177 (70.8%) of the respondents had no family history, 55 (22%) had positive family history, 18 (7.2%) respondents had no information about family history.

Regarding information of lifestyle and healthcare seeking pattern, 218 (87.2%) of the respondents had been detected diabetes by physician, while 32 (12.8%) had been detected in pharmacy. Majority 138 (55.2%) were suffering for 1 to 5 years, 94 (37.6%) were for 6 to 10 years, 16 (6.4%) were suffering for 11 to 15 years and 2 (0.8%) were suffering for 16-20 years. Majority 249 (99.6%) did not follow calculated calorie based diet. Among them 222 (88.2%) used to do only daily activities while 28 (11.2%) did daily walk in addition. Smoking history was negative among 220 (88%) respondents. Drinking alcohol was negative among most (99.6%). Among 250 respondents, 189 (75.6%) of the respondents were receiving health care from allopathy/MBBS doctor currently, 23 (9.2%) were receiving health care from pallichikitshok, 21 (8.4%) were receiving health care from pharmacy, 13 (5.2%) respondents were receiving health care from homeopathy, while 4 (1.6%) were receiving from kabiraj. Among those receiving health care from allopathy/MBBS doctor, majority 107 (56.6%) were receiving from

Govt. health care center while rest 82 (43.4%) were getting health care privately [Table II].

Figure 2 demonstrates that majority 117 (46.8%) respondents were seeking current health care because of cost-effectiveness, 74 (29.6%) were seeking for easy availability, 48 (19.2%) were seeking for choice of specific doctor and 11 (4.4%) were seeking for facility and environment.

Figure 3 illustrates 61 respondents who had non-compliance to receive allopathic health care. The cause among majority (42.62%) of the respondents was the cost. About 27.87% did not get satisfactory outcome, 12 (19.67%) had belief on other health care and 6 (9.84%) had lack of information.

Table I : Socio-demographic characteristics of the study respondents

Characteristics	Frequency (n=250)	Percentage (%)
Age (In Years)		
31-40	31	12.4
41-50	93	37.2
51-60	76	30.4
61-70	36	14.4
71-80	13	5.2
81-90	1	.4
Gender of the Respondents		
Female	157	62.8
Male	93	37.2
Religion		
Islam	195	78
Hindu	50	20
Buddism	5	2
Marital Status		
Married	216	86.4
Widow	33	13.2
Divorced	1	0.4
Level of Education		
Primary level	97	38.8
Secondary level	93	37.2
Higher secondary level	38	15.2
Illiterate	13	5.2
Graduate	9	3.6
Occupation of the Respondents		
Housewife	112	44.8
agriculture	46	18.4
Business	34	13.6
service holder	26	10.4
day laborer	1	0.4
other	31	12.4
Monthly Family Income (In taka)		
≤10000	196	78.4
10001-20000	50	20.0
20001-30000	2	.8
>40001	2	.8

Table II : Information regarding lifestyle and healthcare seeking pattern

Characteristics	Frequency (n=250)	Percentage (%)
Place of detection of diabetes of the respondent		
Physician	218	87.2
Pharmacy	32	12.8
Years of suffering of the respondents		
≤5	138	55.2
6-10	94	37.6
11-15	16	6.4
16-20	2	.8
Calculated calorie based diet		
Yes	1	0.4
No	249	99.6
Physical activity		
Usual daily activities	222	88.8
Daily walk in addition	28	11.2
Smoking status		
Yes	30	12
No	220	88
Alcohol drinking status		
Yes	1	0.4
No	249	99.6
Current health care receiving status of the respondent		
Allopathy	189	75.6
Homeopathy	13	5.2
Pharmacy	21	8.4
Village doctor	23	9.2
Others (kabaraj, local healer)	4	1.6
Place of getting allopathic treatment (n=189)		
Govt. Health care	107	56.6
Private service	82	43.4

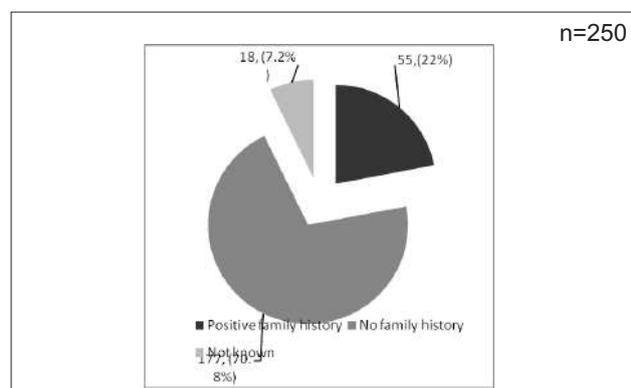


Figure 1 : Distribution of the respondents by family history

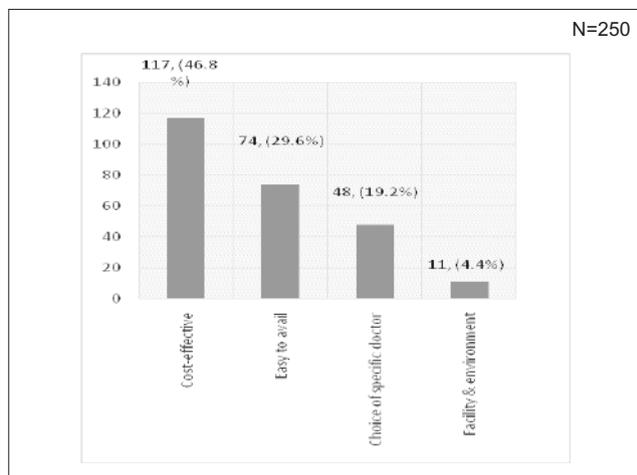


Figure 2 : Distribution of the respondents by reason to receive current healthcare

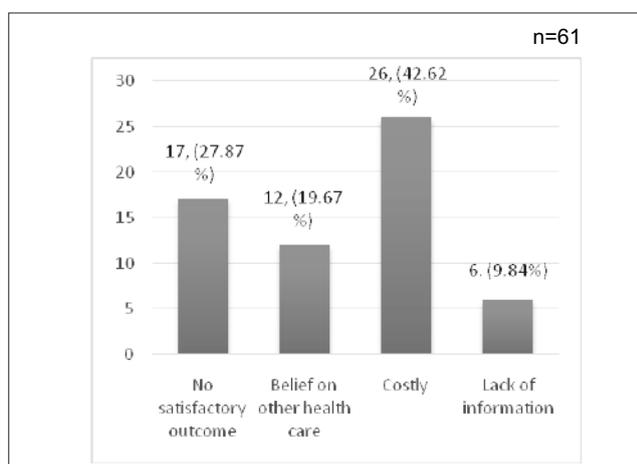


Figure 3 : Distribution of the respondents by cause of non-compliance with allopathic healthcare

The difference of health care seeking pattern by educational qualifications of the respondents was not statistically significant ($\chi^2 = 0.879, p > 0.05$). There was significant association between health care seeking pattern and age of the respondents ($\chi^2 = 5.161, p < 0.05$) and total monthly family income of the respondents ($\chi^2 = 4.884, p < 0.05$) [Table III].

Table III : Association between health care seeking pattern and socio-demographic factors

Factors	Health care seeking pattern		χ^2	p value
	Allopathy	Others		
Age group				
< 50 years	77	35	5.161	.023
≥50 years	112	26		
Education group				
Below primary level	80	30	.879	.349
Above primary level	109	31		
Monthly family Income				
Upto 10000 Taka	142	54	4.884	.027
Above 10000 Taka	47	7		

*Significance level at 5%, df=1.

Discussion

Bangladesh is the one of the developing countries in the world. The country has enormous potential for rapid development in the new world economy. The quality of life of the population in Bangladesh appears to have improved very significantly in recent years. But unfortunately in some sectors Bangladesh is far from the expected development, health sector is one of them. In recent years, the government and non-governmental organizations are working together to ensure basic health care services to all and to expand their health services in rural Bangladesh.

Diabetes has reached all the corners of the world, where there is human being. It afflicts all categories of people irrespective of age, sex, social status, religion and residence. Considering this view, the present study was conducted at some villages of Boalkhali thana under Chattogram district with a view to assess the health care seeking pattern of the diabetic patients in rural community.

The present study revealed that the mean (\pm SD) age was 52.08 (\pm 10.409) years which is consistent with previous study conducted by Abidin SIZ et al. Where mean age of respondent was 53.5 ± 13 years⁵. More than one third of the respondents (37.2%) were within 41 to 50 years age group, about one third (30.4%) were within 51 to 60 years and 14.4% were within 61 to 70 years. 12.4% were within 31 to 40 years and 15.2% were within 71 to 80 years. Only 0.4% was within 81 to 90 years age group. In a study D'Souza et al reported that most of the Diabetics were in the age group 40-50 (about 33.3%) and 33.3% of the respondents in the 61-70 years⁶. None of the study depicts the similar picture, however, it may be concluded that everywhere the affected people belongs to 40-60 years and this is consistent with some previous studies conducted in rural community.

In the current study, it was found that among 250 respondents, 62.8% were female and 37.2% were male type 2 diabetes mellitus patients which is consistent with the study conducted in Malda⁷.

As regards to education, it indicates that majority, 38.8% of the respondents had primary level of education followed by good number, 37.2% had secondary education and 15.2% had higher secondary education. Regarding education, as per BBS statistics in rural area, 49.62% did not pass class I and the rate of primary and secondary completions were 22.01% and 19.50%, respectively⁸.

Regarding monthly family income of the respondents, it is noted that the mean income of each family is 9732.00 (\pm 5183.788) taka. More than two thirds (78.4%) income were blow 10000 taka, followed by one fifth (20.0%) income in the range of 10001 to 20000 taka. Siddique et al studied on "Socioeconomic Status & Health Seeking Behavior of Rural People: A Cross Sectional Study in Fatikchhari, Chittagong" which seems to be similar where 62% of the respondents' income was 10000 to 29999 and 11% had 30000 to 59999 monthly family income⁹.

In this study, majority 70.8% of the respondents did not have the positive family history of diabetes, where 22% had positive family history and 7.2% do not know whether any family history present or not. Abidin SIZ et al., 2013 showed 54.3% positive family history. The difference may be due to the fact that health care set up was not so organized for the rural people. So, probably many of them remain undiagnosed.

The study represents variation in duration of suffering of the respondents but mean (\pm SD) duration was 5.58 (\pm 3.064) years. More than half of the respondents 55.2% were suffering for 1 to 5 years followed by 37.6% of the respondents were suffering for 6 to 10 years and 6.4% were suffering for 11 to 15 years, which is consistent with previous study where 78.6% respondents were suffering for more than 5 years¹.

Health seeking behavior depends on socioeconomic status as well as availability and accessibility of health facility. We know in Bangladesh pharmacy both registered or unregistered are available in here and there and in rural area there is still existence of traditional healer/kabiraj. The study by Siddique et al on "Socioeconomic Status & Health Seeking Behavior of Rural People: A Cross Sectional Study in Fatikchhari, Chittagong" found that two-third respondents seek health care from village doctor (Quack) and one-third visits registered doctor/physiotherapist/dentist and very rare percentage went to homeopathic practitioner which is relevant to our study result⁹.

The present study stated that 56.6% were receiving health care from Govt. health care center while rest 43.4% were getting health care from private doctors. Similar scenario was observed by Abidin SIZ et al where 57.2% of the respondents were visiting Government hospital followed by 24.8% were visiting clinic⁵.

Conclusion

The health care seeking pattern revealed that care was sought from homeopathy, kabiraj, pharmacy salesperson, pallichikishok in the rural community as a complement to care from allopathy from government hospitals or privately, where all had been diagnosed, because of perceived ill-health due to symptoms related to the disease, being signs of poor glycaemic control or complications, lack of blood sugar estimation facility properly, wishes for a cure for diabetes, lack of relief, not getting expected result, cost or come to know about merits of the other health care.

There is a urgent need for an increase in the awareness of diabetes management and its complications in the primary healthcare sector. Continuing education on diabetes and its complications for primary healthcare providers is crucial and this should be accompanied by a regular assessment

of their diabetic knowledge. Screening for diabetes is important, but equally crucial is patient education and counseling. Knowledge of diabetes is therefore essential for primary healthcare and other diabetic patients in order to prevent comorbidities, which may compromise their lifestyles as well as increase the burden on public health care.

Acknowledgements

The authors would like to thank the participants.

Disclosure

All the authors declared no competing interest.

References

1. WHO Mortality Database Geneva: World Health Organization. 2016. <http://apps.who.int/healthinfo/statistics/mortality/causeofdeathquery> (Accessed 12 January 2016).
2. International diabetes federation south-east asia. 2016. <http://www.idf.org/membership/sea/bangladesh> (Accessed 27 July 2016).
3. International diabetes federation. 2008. <http://www.idf.org/>
4. Health bulletin Bangladesh. Healthcare network under MOHFW of Bangladesh. 2015; 19.
5. Abidin, S I Z, Sutan, R B, Shamsuddin, K. Prevalence and determinants of appropriate health seeking behaviour among known diabetics: results from a community-based survey, *Advances in Epidemiology*. 2014; 1-7.
6. D'Souza, A M P, Kundapur, R. and Kiran, N U. A Cross sectional study to determine the prevalence of Diabetes Mellitus and its household awareness in the rural field practice areas of a medical college in Mangalore-A Pilot Study', *Nitte University Journal of Health Science*. 2015; 5(3):43-46.
7. Kanungo, S., Mahapatra, T., Bhowmik, K., Mahapatra, S., Saha, J., Pal, D et al. Diabetes Scenario in a Backward Rural District Population of India and Need for Restructuring of Health Care Delivery Services. *Epidemiol*. 2016; 6:224. doi:10.4172/2161-1165.1000224.
8. Bangladesh Bureau of Statistics (BBS), Household income and expenditure survey-2010, BBS, Dhaka, Bangladesh. 2012b.
9. Siddique MKB, Khan, S, Haque, MS, Sizar, MI, Alam, A. et al. Socioeconomic Status & Health Seeking Behavior of Rural People: A Cross Sectional Study in Fatikchhari, Chittagong', *MOJ Public Health*. 2016; 4(4):90-94.