Patterns of healthcare seeking behavior among persons with diabetes in Central India: A mixed method study

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ABSTRACT

Background: Management of diabetes is complex and requires multiple lifestyle modifications, drug therapy, and a sustained regular follow-up. Complexities of health-seeking pattern in individuals with diabetes have been poorly characterized. **Objectives:** To understand the health-seeking patterns, and reasons of provider preference and switching among persons with diabetes. **Materials and Methods:** We performed a mixed methods study in an urban slum setting of Bhopal. This urban slum was chosen as being a field practice area of the institute, a complete sampling frame with listing of households, and individuals with chronic disease conditions (including diabetes) was available. To be included in the study, the individual should have been an adult, aged ≥20 years, and diagnosed as type 2 diabetes mellitus. Descriptive statistical analysis of sociodemographic and disease management variables was performed. For qualitative component, interviews were transcribed and primary coding was done by two investigators followed by condensation of codes into themes or categories. The frequency of these content categories was presented with count and proportions. **Results:** In total, 60 individuals with diabetes were interviewed. Of all individuals, 36 (60%) were asymptomatic at the time of the first diagnosis, and 57 (95%) were currently under treatment from some healthcare provider. About 25 (41.6%) switched their first provider and remaining continued with the same provider. Second provider was sought by 9 (36%) of 25 patients. Reasons for switching were perceived nonrelief, cost of care, distance of facility, and behavior of care provider. **Conclusions:** Healthcare provider switching is common among persons with diabetes which has implications on continuity of care.

Keywords: Access barriers, diabetes mellitus, healthcare seeking, provider preference

Introduction

Diabetes have emerged as fourth leading cause of years lived with disability globally.[1] Over 65 million adults of age ≥20 years have diabetes mellitus in India with prevalence of 7.7%.[2] Untreated or poorly managed diabetes leads to early macrovascular and microvascular complications. In order to delay or prevent complications, persons with diabetes have adopt lifestyle changes in the form of increased physical activity, quitting tobacco, dietary modifications, and compliance to drug therapy. These measures need to be adhered for lifelong, and therefore, sustained follow-ups are required.[3] Diabetes management involves multiple healthcare providers such as medical professional (specialist and family/general practitioner), dietician, and other professionals depending on course of disease.[4,5] Therefore, persons with diabetes have to choose their healthcare providers and adhere to management plan thereon.

An individual's access to and use of health services depends on their predisposition to use services, enabling or impeding factors, and their perceived need for care.[6] Predisposing factors are the sociocultural characteristics of individuals that exist prior to their illness such as education, occupation, religion,

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How to cite this article: Nimesh VV, Halder A, Mitra A, Kumar S, Joshi A, Joshi R, *et al*. Patterns of healthcare seeking behavior among persons with diabetes in Central India: A mixed method study. J Family Med Prim Care 2019;8:677-83.

age, gender, health beliefs, and attitudes. Enabling factors are the logistical aspects of obtaining care such as availability, accessibility, and affordability of services. Need factors are the most immediate cause of health service use, from functional and health problems, that generate the need for health care services and this include severity of illness and presence of symptoms.[6] At the time of initial diagnosis, most individuals with diabetes are asymptomatic; hence lack of felt need, and disease-denial is a key barrier in its management. In search of a cure, many individuals with diabetes are likely to seek a variety of information sources and diabetes care providers. These information sources include allopathic providers, complementary, and alternative medicine (CAM) providers, mass-media, and word-of-mouth. Often multiple information sources and care providers may have been used in the same time frame.[7-9] Given the plurality of information sources and providers, individuals with diabetes often experiment and switch therapies which, in turn, affects glycemic control.[3,10,11]

Complexities of health-seeking pattern in individuals with diabetes have been poorly characterized. Understanding these dynamics is important to be able to design effective communication and health management strategies. We performed this study to understand the health-seeking patterns and determinants of this complex behavior.

Materials and Methods

Study design

We performed a cross-sectional mixed methods study consisting of in-depth interviews with individuals with diabetes (Qualitative component) and administration of a structured questionnaire (Quantitative component). Institutional Human Ethics Committee of All India Institute of Medical Sciences, Bhopal, approved the study design. Written Informed Consent was obtained from all participants.

Settings

The study was conducted in an urban slum (population 12,000, households 2,000) of Bhopal (population 1.9 million). This urban slum was chosen as being a field practice area of the institute, a complete sampling frame with listing of households, and individuals with chronic disease conditions (including diabetes) was available.

Participants

We considered a logistically feasible sample size of 60 individuals with diabetes for this study. These 60 patients were selected from 188 available in the sampling frame by simple random sampling. To be included in the study, the individual should have been an adult, aged ≥20 years, and diagnosed as type 2 diabetes mellitus. Such randomly selected individuals were approached for participation, and a written informed consent for participation was sought. Individuals who denied consent were excluded. In case of inability of obtaining a consent (locked household, migration of selected participant, or denial) another

participant was selected from the sampling frame. This process was continued till a sample size of 60 was achieved.

Procedures

All eligible and consenting participants were first administered a semistructured questionnaire to collect information about sociodemographic characteristics (age, gender, education, occupation) and disease management (diabetes diagnosis year, chronological health-seeking practices, type of providers, duration, and time-period of consultations). Subsequently, we performed an in-depth recorded interview to know about reasons for seeking health care from a particular provider, changing provider, interrupting consultations, and perceived barriers in health seeking for diabetes. These interviews were held in a quiet place at the patient's residence and lasted for about 20–30 min. The recorded interviews were translated from local language into English. Collection and analysis of data of open-ended questions were preceded simultaneously until no new information was available (saturation).

Analysis

We performed descriptive statistical analysis of sociodemographic and disease management variables. For qualitative component, interviews were transcribed, primary coding was done by two investigators followed by condensation of codes into themes or categories. The frequency of these content categories was presented with count and proportions.

Results

Between June and July 2015, we interviewed a total of 60 individuals with diabetes. Their sociodemographic details are presented in Table 1. Of all individuals, 36 (60%) were asymptomatic at the time of the first diagnosis, and 57 (95%) were currently under treatment from some healthcare provider. In total, 39 participants (65%) did not perceive any benefit from their first providers, yet only 25 (41.6%) switched their provider and remaining continued with the same provider. Of these 25 individuals, another 9 (36%) changed their providers again. Despite the switch, the proportion of individuals cared by different health systems remained similar. The dynamics of healthcare provider switching is shown in Figure 1. For 48 (80%) individuals, their health care providers were within a 5-km radius from their residence.

Reasons for changing healthcare provider were probed by an open-ended question [Table 2]. Some of the quotes highlighting underlying issues are also mentioned. About 25% of the individuals changed their provider due to a perception of no relief. Another 20% of individuals went to new provider due to money constraints. Another 16% of individuals changed the treatment due to inaccessibility, due to either a transportation barrier or due to the presence of other ailments.

"Whenever I feel I am not benefiting good from one doctor I will go to another doctor. Also when the expenses are high I do change the doctors" P3.

Table 1: Sociodemographic characters, comorbidities, and risk factors among participants

Variable	n	%
Age (Mean, SD)	52.35	9.07
Male	28	46.6
Female	32	53.3
Religion		
Hindu	44	73.33
Muslim	16	26.67
Educational Qualification		
Illiterate	21	35.0
Literate	39	65.0
Occupation		
Unskilled labourer	17	29.3
Homemakers	23	38.3
Employed	20	33.3
Below Poverty Line Card Holder	34	56.6
Duration of diabetes in years (Mean, SD)	6.8	14.2
Co-morbidities and risk factors		
Hypertension	26	43.3
Ischemic Heart Disease	6	10.0
Stroke	2	3.33
Tobacco	12	20.0
Status of current BP, BMI (Mean, SD)		
SBP	129.65	18.08
DBP	77.25	12.51
BMI	27.7	4.44
BMI levels		
Normal	15	25.00%
Overweight	30	50.00%
Obese	15	25.00%

SD- Standard Deviation

We also asked about the reasons for continuing with the current provider. About 30% of individuals have chosen the current provider because its services were free of cost.

"There is no money with me. There is no one in this house to earn money. It is difficult to feed the children. No money for seeking private health care. We have to give first priority for feeding our-self than taking medication. So I decided to go in government hospital for diabetes." P2

Another 20% preferred their provider because of good patient care. Trust and relieving symptoms are other factors that helped them to continue the current treatment.

"From the beginning of my treatment itself I am going to the same doctor and my symptoms get relieved from their" P5

About 60% of patients received advice regarding lifestyle changes from relatives and neighbors.

Barriers reported by the participant are further classified in four domains as accessibility, availability, affordability, and acceptability. Some quotes highlighting these issues are also mentioned in Table 3.

Accessibility

Patients face difficulties while accessing healthcare either due to transportation problem or taking more time for consultation.

"It is difficult in going and coming by both walking and by bus especially in the summer season" P59

Table 2: Reasons for change or continuing with healthcare providers, and barriers in diabetes care

Key reasons for change (n=25)		Reasons for continuation (n=60)	
Symptoms are not relieving	6 (24%)	Free of cost	16 (28%)
Money constraints	5 (20%)	Good patient care	11 (19.2%)
Inaccessibility	4 (16%)	Trust	10 (17.5%)
Advice from others	2 (8%)	Symptoms relieving	8 (14%)
Costly drugs	2 (8%)	Money affordable	6 (10.5%)
For treating other diseases	2 (8%)	Easily accessible	5 (8.7%)
To know how far disease progression can be stopped	2 (8%)	Referred from another doctor	3 (5.2%)
More time for consultation	1 (4%)	Advice from others	2 (3.5%)
Incomplete treatment	1 (4%)	Treating with other diseases	1 (1.7%)
Dissatisfaction	1 (4%)	Relatives have also sought healthcare from there	1 (1.7%)
Uncontrolled sugar	1 (1%)	No specific reason	2 (3.5%)
Domains of barriers and their distribution (n=60)			
Accessibility		More time for consultation	2 (3.5%)
		Transportation	10 (17.5%)
Availability		Limited supply of drugs	10 (17.5%)
Affordability		Money constraints	11 (19%)
Acceptability		Difficulty in dieting	5 (8.7%)
		Taking medications	4 (7%)
		Taking medication on time	2 (3.5%)
		Adverse effects of drugs	5 (8.7%)
		Blood sugar monitoring	2 (3.5%)
		Other ailments	7 (12%)
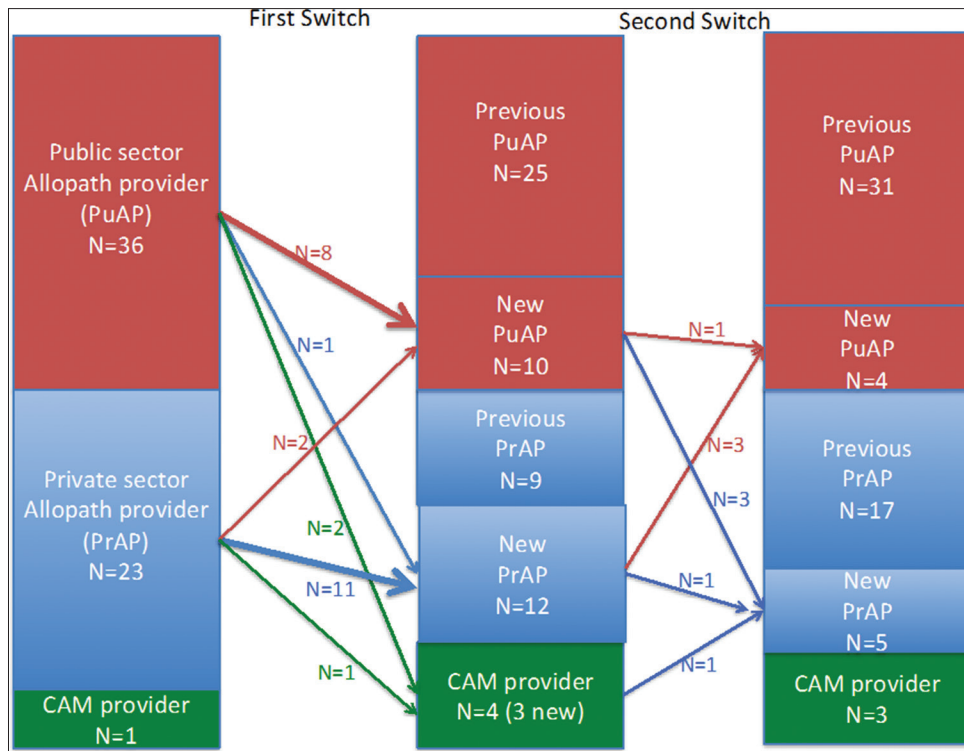
Figure 1: Switching of providers by individuals with diabetes. CAM: Complementary and Alternative medicine; Previous refers to those individuals who continued with their previous provider after first or second switch; New refers to those individuals who chose a new provider after first or second switch; Color of switch arrows indicates switch toward a similarly color-coded provider type

Availability

Due to the limited supply of the drug from the public sector.

"If we are going to any marriage or funeral functions then it is difficult to buy medicines from there. Then again symptoms will come and it takes one or two weeks for relieving from that" P2

Affordability

Patients are not able to buy medicines due to economic constraints.

"I have economical problem so buying drugs regularly is difficult for me also I have to find time for doing the household activities" P12

Acceptability

Around 40% of patients had a barrier at the acceptability domain, such as difficulty in maintaining a regular diet plan, difficulty in taking medication, in monitoring blood sugar level, and also they felt difficulty due to the side effects of the drugs.

"It is difficult for me to follow the dietary restrictions. Also, it is difficult to do exercises regularly" P6

The healthcare seeking phenomenon in diabetes is non-linear, and we constructed a broad sequence of events. This is explained in Figure 2.

Discussion

In this study from an urban slum, it was observed that most healthcare for diabetes was sought from allopathic doctors in the public sector. About two out of every five individuals switched their providers at least once, yet the overall proportion of care in public and private sectors remained similar. Most individuals with diabetes are asymptomatic at the time of initial diagnosis. Diagnosis of diabetes is incidental in them.

In our study also, 60% of all individuals were incidentally detected. This contrasts a study from south India that showed that 72% of patients had symptoms at the time of initial diagnosis.[12] Likely reasons for this discrepancy could be the urban setting for our study and rural setting for the study from south India. Further, most participants from urban slum preferred public health system. Likely reason for this preference was the low cost of services and availability of free drugs, which is very important for the economically disadvantaged community, such as an urban slum. Further, for most individuals, their primary care provider was within 5 km of their residence, and it suggests a locational advantage available with this community.

A Choice-Making Model for health seeking by Young (1981) describes factors responsible for preferential utilization of particular health services. It includes perceptions of illness gravity, knowledge of a home treatment, faith in the remedy, and the accessibility of treatment.[13] In this study, we have

Table 3: Attributes influencing conscious decision making for caregiver selection				
Attributes	**Verbatim from participants**			
Relief in the symptoms	My sugar was not under control with that doctor so I decided to change the consultation	Whenever I am not benefiting good from one doctor I will go to another doctor	My sugar, I think can not be cured by this doctor as he was telling me that this disease can not be cured	That doctor has not treated my disease completely. Also neighbourhood people advised to change the doctor
Financial burden	We have the card made for the gas victims so we are getting free treatmen	Here the fee is less 200 rupees in other clinics the fee itself is 500	I am getting free treatment from there so I decided to go there	The expenses for medicines are high so it is difficult in long run
Caring behaviour of provider	He is a good doctor I am getting relieved from my syptoms	I am getting good treatment from there so I decided to continue treatment from there	He is an old doctor he treated my mother also. I feel more relief of symptoms with his treatment	He understand my problem and my condition
Difficulty to access health care	First doctor is far away from my home so I chose a nerarby doctor	The bus takes more than 2 hours to reach	For that doctor I have to go a long distance also going in sunlight is difficult for me so I changed the consultation	The hospital was away from my home I have to travel in bus to reach there then I decided to go to the nearby doctor
Difficulty to follow the advice	Exercise is difficult, I could not do it on a regular basis.	It was difficult for me to follow diet he prescribed	Too many pills, I can't take	How can I follow the advices completely when I have multiple work
Peer advice onDiabetes	My relatives are going for Unani treatment so I am also going	My neighbour told me that doctor had cured hisDiabetes	My brother is also taking treatment from my current doctor.	My friends have advised me to go there. My sugsr is under control with this treatment
Effect of disease on life	Difficulty in going and coming. I have knee pain it disturbs me. It takes more time so I have to skip my other works	It is difficult to feed the children. No money for seeking private doctor…….	I have more mental tension due to the disease and other problems as well	If we are going to any marriage or funeral functions then it is difficult to buy medicines from there. Then again symptoms will come

This framework divulges the supportive verbatim in connections with attributes. These attributes provide a stimulus either in isolation or in cohesion for conscience decision making about care giver selection
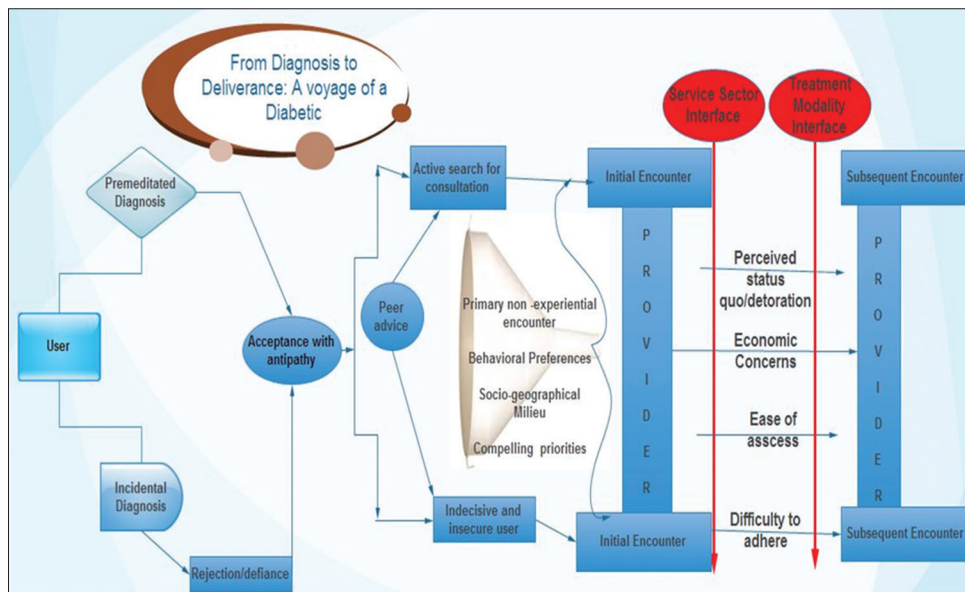
Figure 2: Framework for healthcare provider selection and switching

also found trust in the doctor, the presence of symptoms and accessibility as factors responsible for the choice of their current providers.

A study on healthcare provider switch in a rural community of Kenya described how do individuals go through different alternative treatments when looking for a cure. These may range from self-treatment and/or home remedies, consulting a traditional healer and/or herbalists, to the use of public and private health facilities.[14] However, the dynamics of healthcare

provider switching in our study shows that individuals with diabetes prefer modern systems of medicine.

McKinlay had described health-seeking behavior model in the context of economic, geographic, socialpsychological, sociocultural, sociodemographic, and organizational aspects of the healthcare delivery system.[15]

Despite an abundance of healthcare in the vicinity, the patients face several barriers in diabetic healthcare.[16] We have divided

the barriers mainly into four domains.[6] They are barriers due to accessibility, affordability, availability and acceptability. The barriers due to acceptability are the most common barrier which includes difficulty in following dietary changes, taking medication, and fear due to potential adverse effects of the drug. Financial barriers such as income, health insurance cover, the cost of health services and availability of free medical drugs; geographical proximity of health services; characteristics such as gender, age, social class and education, cultural values, norms, beliefs, definitions of situations, and lifestyles of different socioeconomic groups all these plays role in decision making process for health seeking.[17] Similarly, Anderson's model for healthcare service utilization describes that an individual's access to and use of health services is considered to be a function of their predisposition to use services and factors which enable or impede use and their need for care.[6]

The model proposed in this study takes into account the sociocultural characteristics of individuals that exist prior to their illness, such as education, occupation, religion, age, gender, health beliefs, and attitudes. Logistical aspects such as availability, accessibility, and affordability of services may be categorized as enabling factors of obtaining care. The need factors are the most immediate cause of health service use, from functional and health problems that generate the need for health care services, and this includes the severity of illness and the presence of symptoms. Economic issues in terms of money constraints played a significant role which can be understood by the fact that the study was conducted in an urban slum. Communication in health care has been found to play a profound role in influencing the behavior of the individual and, in turn, impact the outcome in context to diabetes.

The model also throws light on the need for a family centric approach as compared with a generic "one-size-fits-all" approach in addressing the barriers and other multitude of factors involved in the health-seeking pattern of an individual with diabetes. Health seeking patterns and interventions involving the family members has shown promise in improving the health of adults with diabetes.[18,19] Evidence supporting the benefits of a family centric approach in improving the outcomes of diabetics and providing for better regime adherence at home has been established by many researchers.[18,20] Considering quantum of healthcare provider switching among individuals with diabetes, treating physicians need to adopt family centric approach and engage family members as partners in management. This study highlights the fact that healthcare provider switching is common among individuals with diabetes. Further studies focusing on interventions for reducing healthcare provider switching and its impact on glycemic control as well as quality of life among persons with diabetes are warranted.

Conflicts of interest

There are no conflicts of interest.

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