

Haque *et al.*, 2017. Plants used for diabetes
**Plants used for the treatment of diabetes in Brahmanbaria,
Bangladesh**

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Key words: Plants, Treatments, Diabetes, Brhamanbaria, Bangladesh.

Abstract

The present article focuses the plant species for the treatment of diabetes used by the local people of Brahmanbaria district, Bangladesh. The data were collected using semi-structure interviews with key informants during the year of 2015 and 2016. In some cases group discussion and informal conversation with local people were also conducted. The study has been resulted in recording of total 41 plant species used for diabetes treatment under 30 families. Among the plants, 56% are represented by trees, 25% by herbs, 11% by shrubs and 8% by climbers. The most frequently cited plants by the local people for the treatment of diabetes were *Coccinea cordifolia*, *Momordica indica*, *Azadirachta indica*, *Syzygium cumini*, *Terminalia arjuna*, *Aegle marmelos*, *Andrographis paniculata*, *Terminalia chebula*, *Averrhoa bilimbi*, *Swietenia mahagani*. The data analysis was also confirmed the cultural bound plants of local people for diabetes using fidelity value index. Among the plants *Abelmoschus esculentus*, *Carissa carandas*, *Catharanthus roseus*, *Citrus aurantium*, *Citrus grandis*, *Dillenia indica*, *Gynura nepalensis*, *Momordica indica*, *Swietenia mahagani*, *Syzygium cumini*, *Tinospora crispa*, *Ficus racemosa* were attained 100% fidelity level values. Plants which were most cited by local people for diabetes treatment and plants with 100% FI values may further subjected for phytochemical investigation to find bioactive compounds for the treatment of diabetes.

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INTRODUCTION

Diabetes is a metabolic disease that resulting in a chronic state of hyperglycemia (Rodrigues et al., 2012). Hyperglycemia can cause retinopathy, nephropathy, and cardiovascular damage (ADA, 2007; Malviya et al., 2010; Wild et al., 2004).The rapidly increasing incidence of diabetes is becoming a serious threat to mankind health in all parts of the world (Malviya et al., 2010). Moreover, during the past few years some of the new bioactive drugs isolated from plants showed antidiabetic activity with more efficacy than oral hypoglycemic agents used in clinical therapy (Malviya et al., 2010). At present, it is affecting around 143 million people (Mentreddy, 2005). Between 2010 and 2030, there will be a 69% increase in numbers of adults with diabetes in developing countries and a 20% increase in developed countries (Shaw et al., 2010). The number of adults with diabetes in the world will rise from 135 million in 1995 to 300 million in the year 2025 (King et al, 1998). In addition, three new people at every ten seconds or almost ten million people per year are affected by diabetes (Lenzo, 2011). In Bangladesh, which had a population of 149.8 million in 2011 (Bangladesh Census, 2011) a recent meta-analysis showed that the prevalence of diabetes among adults had increased 9% in 2006 to 2010 (Shera, 1999). According to the International Diabetes Federation, the prevalence will be 13% by 2030 (IDF, 2012). Though many synthetic drugs were discovered for diabetes but that cannot reachable to the rural people due to the high cost.

WHO has pointed out that prevention of diabetes and its complications is not only a major challenge for the future, but essential if health for all is to attain (WHO, 2011). Diabetes affecting nearly 10% of the population all over the world (Burke et al., 2003) and considered as a major cause of high economic loss which can in turn impede the development of nations (Mahabir and Gulliford, 1997). It is projected to become one of the world's main disablers and killers within the next 25 years. The management of diabetes is a global problem until now and successful treatment is not yet discovered (Malviya et al., 2010). Therefore, in recent years, considerable attention has been directed towards identification of plants with antidiabetic ability that may be used for human consumption (Li et al., 2004). Plants are widely as antidiabetics (Rodrigues et al., 2012) and the development of medicines by the production of synthetic or semi-synthetic bioactive molecules is based on the chemical diversity of plants (Phillipson, 2007). More than 400 plant species having hypoglycemic activity have been available in literature (Oliver-Bever., 1986; Roy et al., 2005), however, searching for new antidiabetic drugs

from natural plants is still attractive because they contain substances which take alternative and safe effect on Diabetes (Sucharitha and Estari, 2013).

Medicinal plants used for the treatment of diabetes have been carried out in Indian subcontinent, Native Americans, Chinese, South Americans and Asian Indians (Mentreddy et al., 2005; Gover et al., 2002; Mukharjee et al., 2006). Recently, there has been a growing interest in the herbal medicine in care and management of diabetes both in developing and developed countries, due to their natural origin and less side effects (Modak et al., 2007; Hasani-Ranjbar et al., 2009). Medicinal plants have been used by the local people in Bangladesh for many healthcare problems. However, in Bangladesh the traditional medicinal plants that are used by the indigenous people for the treatment of diabetes have not yet been studied in great detail except some study (Orvic et al., 2013). Thus, these medicinal plant which are used for diabetes are important issues of research, especially by the ethnobotanical survey from indigenous people for find out the important medicinal plant for preclusion of diabetes in Bangladesh. Present study documented the plant species mentioned for the treatment of diabetes by ethnobotanical surveys done in Brahmanbaria from Bangladesh and evaluated the current status of scientific knowledge related to the antidiabetic activity of these plants.

MATERIALS AND METHOD

Study area

Brahmanbaria is a district in east-central Bangladesh lies between 23°57'10" and 23°55'28" N latitude and between 91°07'00" and 91°11'67"E longitudes (Fig: 1). The district is geographically characterized by low-lying land with small hills and hillocks of red soil (Musa and Muhammad., 1998). Total population of Brahmanbaria is 2,840,498 & density 1,500/km² (Bangladesh Census, 2011). This is a culturally rich area. This area is located near the Tripura border of India, so cultural knowledge of two countries cross connected by this area. It also comprises heterogeneous habitat including foothills, wetlands, floodplain, and homestead. Railway & junction transition area lies between Bangladesh & India. So biodiversity of this area is quite good.

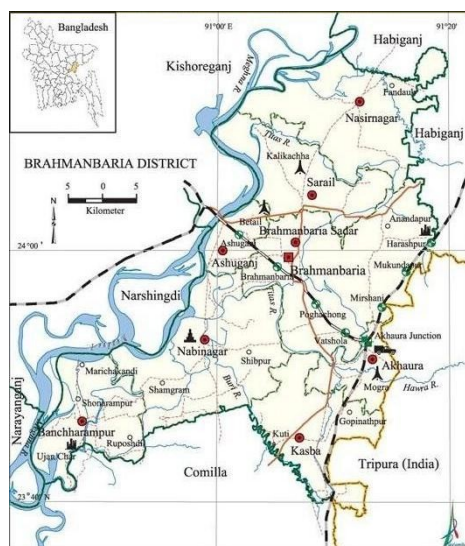


Fig. 1: Study area Brahmanbaria district (Map)

Ethnobotanical data collection and type of data collection

Ethnobotanical study carried out from January 2015 to January 2016 following the standard guidelines for ethnobotanical survey (Martin, 1995; Alexiades, 1996). To get the information about the medicinal plants used for the treatment of diabetes from Brahmanbaria, interviews of the key informants (Martin, 1995; Tremblay, 1957) were implemented. Total 452 interviews were conducted in which 264 males and 188 females from different region of study area. The data of medicinal uses have been recorded through semi-structured interviews, focus group discussion and informal conversations (Alexiades, 1996; Chambers, 1994; Martin, 1995). The information obtained was cross-checked with the other informants (Hong et al., 2015). Every informant was interviewed once. Local assistant often helps to understand dialect and traditions. The questionnaire contained no strict questions and informants were allowed to speak spontaneously in their local language and without pressure (Martin, 1995). General knowledge about diabetes and access of allopathic medicine, social status of informants also discussed. Gender, age, profession, education, and any other information concerning their background were recorded for each informant. The informants were native-born or had been living in the study area for a long time. A digital voice recorder was used during interview and photographs of all recorded medicinal plants have been captured from study area. Face to face interviews were conducted for resolving and registering demographic characteristics of respondents. Among the informants age groups of 51–60 was very high compared to other groups and most of them are

Muslim. Education levels of the informants were from illiterate up to M.Sc. Degree (Table-1). Professionally they were mostly farmer, fisherman, day labor, house wife, small shopkeepers, teacher and health worker, village medicine men, allopathic doctors, kobiraj (local traditional healer) etc.

The informants were asked to show the plant sample during interview. Voucher specimens for each medicinal plant have been collected and processed using standard herbarium techniques (Hyland, 1972; Alexiades, 1996). The specimens were identified consulting different Floras viz., Hooker, 1872-1897; Prain, 1903; Uddin and Hassan, 2004; Siddiqui et al., 2007c and Ahmed et al., 2008a, 2008b, 2009b, 2009c, 2009d, 2009e. Specimens available at Dhaka University Salar Khan Herbarium (DUSH) were consulted in identifying the collected plant specimens. Voucher specimens have been deposited at Salar Khan Herbarium, Department of Botany, and university of Dhaka.

Table 1: Sample size and demographic data of key informants

Informants group	No. of informants	Gender (female/male)	Age
Diabetic patients	65	36/29	(38-71)
Traditional healers (Kobiraj)	49	11/38	(35-80)
Health worker and Allopathic doctor	54	19/35	(25-64)
Village doctors	27	0/27	(30-75)
Knowledgeable elder	95	44/51	(60-96)
General inhabitants (farmers, housewife, fisherman and others)	163	79/84	(25-52)

Data analysis

The frequency of citation was calculated to evaluate the prevalence of one particular plant species used for the treatment of diabetes in relation to the overall citations for all plants. The frequency of citation for a plant was calculated as follows: Frequency of citation for a particular

species= (Number of citations for that particular species/ Number of all citations for all species)*100 (Bahmani et al., 2014; Uddin et al., 2014, Uddin et al., 2015).

The FI value is useful for identifying the informants most preferred species in use for treating certain ailments (Friedman et al., 1986). The fidelity level (FL), the percentage of informants claiming the use of a certain plant species for the same major purpose, was calculated for the most frequently reported diseases or ailments as:

$$FL (\%) = (N_p / N) \times 100$$

Where, N_p = number of informants that claim a use of a plant species to treat a particular disease; N = number of informants that use the plants as a medicine to treat any given disease

Results

The ethnobotanical study has been resulted in recording of total 41 medicinal plant species under 30 families that were reported by 452 key informants for the treatment of diabetes (Table-2). According the citation frequency of all medicinal plants, the most frequently used plants were *Coccinea cordifolia*, *Momordica indica*, *Azadirachta indica*, *Syzygium cumini*, *Terminalia arjuna*, *Aegle marmelos*, *Andrographis paniculata*, *Phyllanthus acidus*, *Phyllanthus emblica*, *Tamarindus indicus*, *Swietenia mahagani*, *Musa paradisiaca*, *Averrhoa bilimbi* (Fig: 4).

According to the habit diversity of recorded medicinal plant, 56% were tree, 25% were herb, 11% were shrub and 8% were climbers (Figure -2). A similar trend was also observed that trees and shrubs were the most used growth form of medicinal plants in Bangladesh found in recent investigation (Uddin et al., 2013; Motiur et al, 2013).

Leaves are the most commonly used part for medicinal plants or for the preparation of the traditional medicine (Figure -3). Similar trend of using leaves for medicinal use has also been reported from other studies from Bangladesh (Uddin et al., 2012; Uddin et al., 2014, Bishwas, 2010; Uddin et al., 2013; Uddin et al., 2015; Orvic et al., 2013; Islam et al., 2014). Leaves and seed may contain or accumulate the pharmacologically active agents of plants (Orvic et al., 2013). In the present study area threat to the species is insignificant as leaves are the leading plant part used for medicinal purposes. The reason why leaves were used mostly is that they are collected very easily than underground parts flowers and fruits (Giday et al., 2009) and in

scientific point of view leaves are active in photosynthesis and production of metabolites (Ghorbani, 2005).

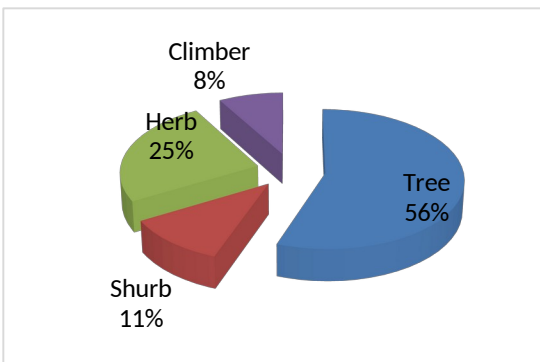


Figure 2: Variation in habit of plant species used in treatment of diabetes

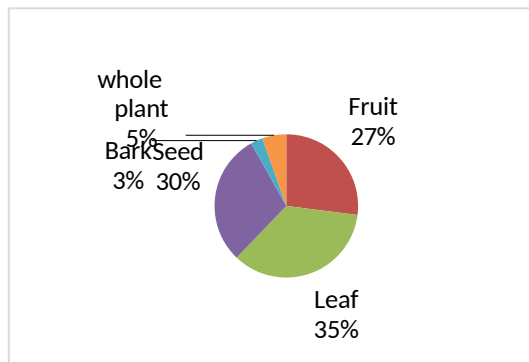


Figure-3: Proportion of plant parts used in treatment of diabetes

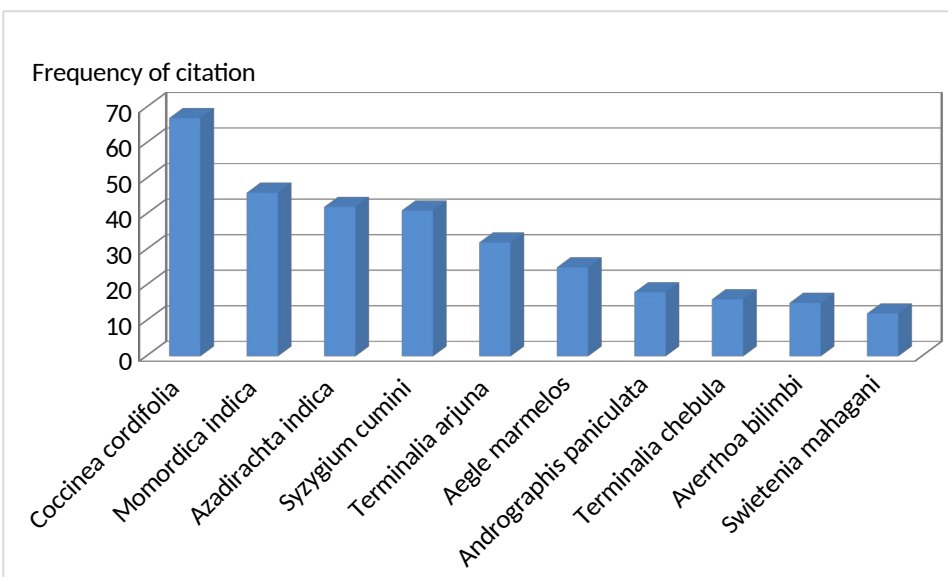


Figure-4: Most cited medicinal plant

During ethnobotanical survey the data of the other use of this medicinal plant also recorded to calculate the fidelity level. Data shows that out of 41 recorded medicinal plants, 12 medicinal plants attained 100% fidelity level. These were *Abelmoschus esculentus*, *Carissa carandas*, *Catharanthus roseus*, *Citrus aurantium*, *Citrus grandis*, *Dillenia indica*, *Gynura nepalensis*, *Momordica indica*, *Swietenia mahagani*, *Syzygium cumini*, *Tinospora crispa*, *Ficus racemosa*. Plants gaining nearly maximum FI value were *Cocinea cordifolia*, *Trigonella foenum-graecum*, *Terminalia aurjuna*.

Table-2: Diversity of plant species used for the treatment of diabetes in Brahmanbaria

Botanical name (Voucher specimen ID)	Local name	Family	Habit	Plant part used	Prepare form	frequency of citation	Fidelity level
<i>Abelmoschus esculentus</i> (L.) Moench TH-215	Vendi	Malvaceae	S	Fruit	Cooked to make pickle which taken internally	0.33	100
<i>Abroma augusta</i> (L.) L. f. TH-34	Ulotkombo l	Sterculiaceae	S	Leaf	Soaked in water at night than taken internally in morning	0.33	1.33
<i>Aegle marmelos</i> (L.) Corr. TH-25	Bel	Rutaceae	T	Leaf/ Fruit	Juice taken internally	2.47	32.60
<i>Agaricus campestris</i> TH-218	Mashroom	Agaricaceae	H	Fruit body	Fried & eaten	0.16	1.17
<i>Allium sativum</i> L. TH-117	Roshun	Liliaceae	H	Whole plant	Juice taken internally	0.66	2.46
<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees TH-45	Chirota	Acanthaceae	H	Leaf/ Seed	Grinding & mixed with water than taken internally every morning	7.09	31.85
<i>Averrhoa bilimbi</i> L. TH-54	Bilimbi	Averrhoaceae	T	Fruit	Cooked and taken internally	2.47	38.46
<i>Azadirachta indica</i> A. Juss. TH-04	Neem	Meliaceae	T	Leaf/ Seed	Small tablet made from leaf Paste & taken internally in morning & evening	7.26	29.72
<i>Bacopa monneiri</i> (L.) TH-261	Noinna shakh	Scrophulariaceae	H	Leaf	Cooked which taken internally	2.14	86.66
<i>Bombax ceiba</i> L. TH-40	Tula gach	Bombacaceae	T	Bark	Grinded & mixed with water than taken internally	0.49	6.97
<i>Carica papaya</i> L. TH-18	Pepe	Caricaceae	S	Fruit	Juice taken internally	0.99	75
<i>Carissa carandas</i> L. TH-238	Koromcha	Apocyanaceae	T	Fruit	Juice taken internally	0.99	100
<i>Catharanthus roseus</i> TH-12	Noyontara	Apocyanaceae	S	Leaf	Decoction taken internally	1.48	100
<i>Centella asiatica</i> (L.) TH-02	Adamanki	Apiaceae	H	Leaf	Decoction taken internally	1.65	3.87
<i>Citrus aurantium</i> L. TH-180	Tok Komola	Rutaceae	T	Fruit	Juice taken occasionally	0.99	100
<i>Citrus grandis</i> (L.) Osbeck TH-57	Jambura	Rutaceae	T	Leaf	Juice taken internally	0.99	100
<i>Coccinea cordifolia</i> (L.) Cogn. TH-03	Telakucha	Cucurbitaceae	C	Leaf	Paste taken internally with boiled rice	20.29	95.34
<i>Dillenia indica</i> L. TH-110	Chalta	Dilleniaceae	T	Fruit	Juice taken internally	0.82	100
<i>Ficus hispida</i> L. TH-53	Dumur	Moraceae	T	Seed	Two raw fruits are taken internally everyday	1.32	80
<i>Ficus racemosa</i> TH-256	Jog dumur	Moraceae	T	Leaf/ Seed	Decoction taken internally	0.86	100
<i>Gynura nepalensis</i> TH-262	Diabetes pata	Asteraceae	H	Leaf	3/4 leaves soaked in water which taken two times daily	3.08	100
<i>Heliotropium indicum</i> L. TH-113	Ayatunda	Boraginaceae	H	Leaf	Juice taken internally	2.64	40
<i>Mangifera indica</i> L. TH-133	Aam	Anacardiaceae	T	Leaf	Decoction of young leaves taken internally	1.39	10.97
<i>Momordica indica</i> L. TH-120	Titkona	Cucurbitaceae	C	Fruit/ seed	Juice taken internally	7.59	100

<i>Moringa oleifera</i> Lamk. TH-26	Sajna	Moringaceae	T	Leaf/ Fruit	Boiled with salt & taken internally	2.64	45.71
<i>Musa paradisiaca</i> L. TH-67	Attya kola	Musaceae	T	Fruit	Juice taken internally	2.80	58.62
<i>Nigella sativa</i> L. TH-80	Kalojira	Ranunculaceae	H	Seed	Juice taken internally	0.49	42.85
<i>Ocimum sanctum</i> L., TH-10	Tulsi	Lamiaceae	H	Leaf	Juice taken internally	0.33	33.33
<i>Phyllanthus acidus</i> L. Skeels TH-97	Arboroi	Euphorbiaceae	T	fruit	juice taken everyday	3.13	67.85
<i>Phyllanthus emblica</i> L. TH-05	Amloki	Euphorbiaceae	T	fruit	2/3 fruits taken every day	4.29	83.87
<i>Spondias pinnata</i> (L. F.) Kurz TH-07	Amra	Anacardiaceae	T	Leaf	Juice taken internally	0.82	11.11
<i>Swietenia mahagani</i> Jacq. TH-42	Meharani	Meliaceae	T	Seed	Dried seed taken internally everyday as necessary	3.96	100
<i>Syzygium cumini</i> (L.) Skeels TH-257	Jam	Myrtaceae	T	Seed	Paste taken internally	7.09	100
<i>Syzygium samarangense</i> (Blume) Merr. & Perry, TH-160	Lal jamrul	Myrtaceae	T	Seed	Juice taken internally	1.81	68.75
<i>Tamarindus indica</i> TH-197	Tentul	Cesalpinioidae	T	Seed	Powder mixed with water which is taken internally	1.98	27.90
<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn. TH-01	Aurjun	Combretaceae	T	Bark	Two spoonful of Powder mixed with one glass of water which taken internally every morning	3.96	92.30
<i>Terminalia bellerica</i> TH-77	Bohera	Combretaceae	T	Seed	Juice taken internally	0.33	33.33
<i>Terminalia chebula</i> Retz. TH-13	Haritoki	Combretaceae	T	Seed	Soaked in one glass of water than taken internally in morning	1.81	30.55
<i>Tinospora crispa</i> (L.) Hook. F. & Thoms, TH-59	Guloncho	Menispermaceae	C	Leaf	Soaked water taken internally	1.32	100
<i>Trigonella foenum-graecum</i> L. TH-101	Methi	Fabaceae	H	Seed	Soaked in water at night than taken internally in morning	2.14	92.85
<i>Ziziphus mauritiana</i> Lamk. TH-131	Boroi	Rhamnaceae	T	Leaf	Boiled water taken internally	1.32	43.33

S-Shrub, T- Tree, H- Herb, C- Climber

Discussion

Much ethnobotanical survey has been carried out from different parts of Bangladesh (Hassan and Khan, 1986, 1996; Alam, 1992; Yusuf et al., 2009, Gani, 2003; Uddin et al., 2001, 2004, 2006, 2008, 2012, 2014, 2015; Uddin et al., 2013, 2015; Khan et al., 2015, Rahman, 1999, 2010; Rahman et al., 2003, 2007). But none of these focusing on ethnobotanical survey related to antidiabetic plant and only few plants were reported as anti-diabetic plant in recent survey (Rahman, 2015; Orvic et al., 2013).

The present ethnobotanical survey mentioned 41 antidiabetic plants belonging to 30 families that were acquired by conducting 452 interviews at nine upazila of Brahmanbaria district (Table 2). Medicinal plant from the family Combretaceae and Rutaceae, Fabaceae found high number of species which is similar to the recent literature from Bangladesh (Orvic et al., 2013; Rashid et al., 2014; Kadir et al., 2012).

Most of the reported species were tree in nature. The mode of preparation of major portions of the plant species is juice which is used internally. Most of the plant species were very common and were cultivated or planted in homestead or roadsides which is similar to other study (Kadir, 2012).

From the most cited species some were similarly reported from other ethnobotanical studies from Bangladesh viz: *Coccinea cordifolia*, *Momordica indica*, *Moringa oleifera*, *Azadirachta indica*, *Syzygium cumini*, *Terminalia arjuna*, *Andrographis paniculata*, *Aegle marmelos*, *Centella asiatica*, *Ficus racemosa*, *Swietenia mahagani*, *Trigonella foenum-graecum*, *Musa paradisiac* (Alam, 2007; Orvic et al., 2013; Uddin et al., 2014; Uddin et al., 2015; Sajib and Uddin, 2013; Uddin et al., 2015; Kabir et al., 2015; Kadir, 2012; Rahman, 2015; Yusuf, 2009). Medicinal plants viz: *Citrus aurantium*, *Citrus grandis*, *Dillenia indica*, *Gynura nepalensis*, *Syzygium samarangense*, *Ziziphus mauritiana* were reported from present study which were not commonly mentioned in other studies as antidiabetic plant (Alam, 2007; Orvic et al., 2013; Uddin et al., 2014, 2015; Sajib and Uddin, 2013; Uddin et al., 2015; Kabir et al., 2014; Kadir, 2012; Rahman, 2015; Yusuf, 2009).

Medicinal plant having highest FI value and Cf value (highest citation frequency) of the present survey was discussed here comparing with the other related literature. *Coccinea cordifolia* was reported from Bangladesh as an antidiabetes plant (Khan et al., 1979, Kadir, 2012; Orvic et al., 2013, Uddin et al., 2015, Uddin and Sajib, 2013). This plant is easily available in the study area and people were well known about this medicinal plant. Leaves of *Coccinia indica* showed hypoglycemic effects in several animal studies (Shibib et al., 1993; Hossain, 1992; Venkateswaran and Pari, 2003).

Azadirachta indica, a popular medicinal plant in the study area which has multipurpose uses and reported from Dhaka (Orvic et al., 2013), Sylhet (Saheen et al., 2010), Rangamati (Sarkar et al., 2013), Bagerhat (Hassan, 2012), Feni (Uddin, 2015). Anti-hyperglycemic effects in normal or diabetes-induced animal models were shown for leaf extracts of *Azadirachta indica* (Kar et al.,

2003). Seed extracts had significant hypoglycemic activity in a small cohort of type 2 diabetes patients (Waheed et al., 2006). This plant has highest citation number but lowest fl value as because it is used for some other diseases. For example leaves were widely used in the study area for skin diseases.

Swietenia mahagoni was reported as a medicinal plant used for the treatment of diabetes in Bangladesh (Orvic et al., 2013) but not reported from other recent studies (Rahman, 2015; Uddin et al., 2015). In present study seed of *Swietenia mahagoni* was dried and taken internally for treatment of diabetes. Recent report also emphasize the hypoglycemic and anti-oxidant activity of *Swietenia mahagoni* bark and seed extracts (Panda, 2010; De et al., 2011).

Syzgium cumini, one of the seasonal fruit in Bangladesh and popularly used for treatment of diabetes. Paste of seed was internally taken by the local people of Brahmanbaria. kabiraj provided tablet to the diabetic patient which is made by the mixture of seeds of *Syzgium cumini* and *Azadirachta indica*. Hypoglycemic activity of ethanolic crude extract of leaves in diabetic rats (Schoenfelder et al., 2010); aqueous leaf extracts showed hypoglycemic activity in hyperglycemic patients (Bopp et al., 2009); hypoglycemic activity attributed to cuminoside from seeds (Farswan et al., 2009);

Andrographis paniculata, a herbaceous medicinal plant which is used for diabetes from other areas from Bangladesh (Orvic et al., 2013, Akber et al., 2011, Rahman, 2015). Kabiraj said that they collect this plant material from local market and sold it to the local people for the treatment of diabetes.

An edible vegetable *Momordica indica*, locally known as titkona is a popularly used for the treatment of diabetes from Bangladesh (Orvic et al., 2013, Uddin, 2015, Sajib and Uddin, 2013; Rahman, 2013, 2015; Yusuf et al., 2009; Gani, 2003).

Ficus hispida attain 80% fl value in the present study is also reported by others (Khan et al., 2015, Akber et al., 2011, Rahmutullah, 2011). Bark extracts of the plant resulted in significantly reduced blood glucose levels and increased serum insulin levels. In present data showed that seed were used by the local people. So plant parts may vary for different areas and that should be scientifically evaluated.

Antidiabetic reports for *Dillenia indica*, *Averrhoa bilimbi*, *Zizipus mauritiana* and *Syzgium samargenes* were not commonly found from other studies from Bangladesh. So that formularies should be properly investigated. The plants which were reported by informants support the

scientific validation, so that these plant or plants parts can be a good source for future drug discovery or active bioactive component can be found by the further phytochemical analyses.

Conclusion

The first effort was taken to document the plants used in the treatment of diabetes using standard ethnobotanical method at Brahmanbaria district. Maximum people in the study area were well informed about medicinal plant especially elderly men and women. Recently, they are losing their precious heritage of plant use indigenous knowledge because of, industrialization and urbanization. Local kobiraj were not keen to do their traditional profession for the poor income. There is no written document of such folk knowledge. The recent survey revealed that kobiraj or local medicine man was not willingly sharing their knowledge. So that, it is alarming that the knowledge of ethnobotany is disappearing rapidly. It is urgently needed to document these information before disappear forever from this region. Moreover, if the plants of this locality can be thoroughly examined and investigated for further research and study, the probability of finding new class of phytochemical and drug in certain medicinal plants which were most cited by local people in the study area. These medicinal plants used by the local people may be useful to the scientist or scholars working in the field of pharmacology and therapeutics to develop anti-diabetic drugs.

Acknowledgement

The authors are greatly acknowledged for the financial support of the Prime Minister's Office of the Government of the People's Republic of Bangladesh. They are also thankful to the local people of Brahmanbaria district who provided information during data collection.

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