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Health Care Seeking Behaviour among People Living With Type-2 Diabetes in Rural Area of Eastern, Nepal

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Abstract

Objectives: This study assess the factors associated with health care seeking behaviour among the people living with type 2 diabetes of eastern Nepal.

Methods: We designed a cross sectional study to include diabetic patients of Baniyani Village Development Committee (VDC) of eastern Nepal. Face to face interview technique assessed factors associated with health care seeking behaviour with the help of pre-tested, semi structured questionnaires. Entered data in Micro-soft excel 2007 further processed in SPSS v.11.5 for analysis.

Results: Mean age of respondents was 55.23 years. The proportion of the respondents with appropriate health care seeking behaviour was 84.3%. Status of alcohol consumption, presence of complications and perceived severity about disease were considered as factors associated with health care seeking behaviour in unadjusted analysis but after adjusting for potential confounders, status of alcohol consumption (AOR: 4.063, 95% C.I: 1.295-12.754) and presence of complications (AOR: 3.736, 95% C.I: 1.146-12.177) were found to be predictor of appropriate health care seeking behaviour.

Conclusion: Appropriate health care seeking behaviour was affected by status of alcohol consumption and health of the diabetic patients.

Keywords: Health care seeking behaviour; Type 2 diabetes; Rural area

Introduction

Changing human behaviour and lifestyle over the last century have resulted in a dramatic increase in the incidence of diabetes worldwide [1]. Approximately 387 million people are living with diabetes worldwide with an estimated prevalence of 8.3% in 2014 and are predicted to increase to 10% by the year 2030 [2]. Diabetes mellitus has become an important health concern in the South Asian region with an estimated increase in the prevalence of diabetes of over 151% between year 2000 and 2030 [3].

The estimated pooled prevalence of type 2 diabetes in Nepal was 8.4% [4]. A cross-sectional community based study conducted in urban and rural areas in the Kathmandu valley of Nepal detected on overall diabetes prevalence of 25.9% [5]. According to the study conducted in Eastern Nepal, 6.3% of people were living with diabetes [6].According to the 2013-2014 annual report of the department of health services, 84.7% of the total number of inpatient visits in Nepal were attributed to NCDs [7].

Health-care seeking behaviour is important as it determines acceptance of health care and outcomes of chronic conditions. Positive health-seeking behaviour (i.e., the early recognition of symptoms, presentation to health facilities, and compliance with effective treatment) should improve control of diabetes and thereby reduce the incidence of complications associated with this devastating disease [8]. In effort to reduce the disparities in the health of populations, it is well recognized that the provision of medical services alone is inadequate [9]. Socio-economic status, sex/gender, level of education, adherence to medical services are few other factors which affect the health care seeking behaviour of the people. Health seeking behaviour is directly related to disease incidence, prevalence and complication.

Diabetes is no more the disease of urbanization as the prevalence of diabetes is also increasing in rural areas also. This study discovered factors associated with health care seeking behavior among type 2 diabetic patients in one of the rural VDC of eastern Nepal.

Methods

Community based cross Sectional study was conducted in Baniyani Village Development Committee (VDC) of Jhapa district in eastern Nepal from 1st December 2016 to 31st May 2017. According to census 2011 of Nepal, it has 1,444 households and 7,714 total populations, among them 4,024 were male and 3,690 were female. Primary Health Care Center (PHCC) is the main health facility present in Baniyani VDC.

A total of 102 people with type 2 diabetes residing in Baniyani were included in this study.

Diabetic patient diagnosed and using medicine from primary health care center, local pharmacy, private clinics or any hospitals and residing in this VDC were located with the help of medical records and registers. Those patients who were diagnosed out of the local health facilities but residing in Baniyani VDC were located with the help of local health workers and female community health volunteers (FCHVs). Those identified patients, who were not available during first

visit, were subsequently followed for second and third times.

Data was collected by interviewing the diabetic patients by using a pre-tested semi-structured questionnaire. The questionnaire was used to elicit information from each study participant for socio-demographic characteristics, disease profile and health care seeking behaviour. Content and face validity of the questionnaire was established by literature review and consultation with concerned experts and peer review.

Appropriate health care seeking behaviour among people with diabetes in this study has been defined as seeking treatment either through oral hypoglycemic drugs or through insulin or combined from a modern health facility (PHCC, hospitals both private and public and clinics) [10].

Collected data was coded and entered in Micro-soft excel 2007 and analysis was done in Statistical Package for Social Science (SPSS v.11.5). Chi-square and Fisher exact test (at 5% level of significance and 95% CI) were done to see the association between dependent and independent variables. Variables with p-value less than 0.2 were considered for binary logistic regression analysis. Backward conditional method was used to see the independent effect of the independent variables with outcome after adjusting for potential confounders.

All those diabetic patient who were more than 20 years and been diagnosed with diabetes with more than six months were included in this study. Institutional Review Committee (IRC) of B.P Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal provided Ethical Clearance.

Results

This study has identified 102 type 2 diabetic patients aged over 20 years, residing in Baniyani.

Table 1 shows the socio-demographic characteristics of the respondents. The mean age ± SD of the participants in this study was 55.23 ± 12.39 years. More than two third of the participants (77.5%) were literate and among them 68.4% were having formal education.

Large proportions of the respondents (81.4%) were non-smoker. About 28.4% of the participants were alcohol consumer and consumed jad/rakshi (home-made alcoholic drink).

Table 2 depicts the disease profile of the respondents. Majority (68.6%) of the respondents reported having diabetes for less than 5 years. Most (58.8%) of the respondents were having co-morbidity. The retinopathy was mostly (37.3%) reported complication.

About 59.8% of the respondents do not have family history of diabetes. Majority (77.5%) of the respondents perceived diabetes as a severe disease.

Health care seeking behaviour of the respondents is shown in Table 3. Almost half (49%) of the respondents were diagnosed in public health facility. Majority (94.5%) of the respondents were using oral allopathic medicine from public health facility (68.1%). More than half (63.7%) respondents have access to the health facility within the walk of 30 minutes.

Many (56%) of the respondents did not get advice on effectiveness of the medicine during visit to health facility and 67.6% of the respondents were not known about the availability of free medicine of diabetes in Primary Health Care center.

From the operational definition, those respondents who were using

Characteristics	Categories	Frequency n=102	Percentage (%)
Age in years	<50	42	41.2
	≥ 50	60	58.8
Mean age ± SD=55.23 ± 12.39 years			
Sex	Male	61	59.8
	Female	41	40.2
Ethnicity	Dalit/Janajati	24	23.5
	Madeshi	6	5.9
	Muslim	11	10.8
	Brahmin/Chhetry	61	59.8
Family type	Single	45	44.1
	Joint	57	55.9
Marital status	Married	100	98
	Widow	2	2
Socio-economic status	Upper	0	0
	Upper middle	17	16.6
	Middle or Lower middle	57	55.8
	Lower/Upper lower	28	27.6
	Lower	0	0
Educational status	Literate	79	77.5
	Formal	54	68.4
	Informal	25	31.6
	Illiterate	23	22.5
Smoking habit	Yes	19	18.6
	No	83	81.4
Alcohol consumption	Yes	29	28.4
	No	73	71.6
Type of alcohol consumption* (n=29)	Beer	13	12.7
	Wine	1	1
	Vodka	5	4.9
	Jad/rakshi	20	19.6
*multiple response			

Table 1: Socio demographic characteristics of the respondents.

allopathic medicine from modern health care facility were classified as appropriate health care seeking behaviour. The pie chart indicates that the majority (84.3%) of the respondents were having appropriate health care seeking behaviour (Figure 1).

As shown in Table 4, alcohol consumption (OR: 0.236, 95% CI: 0.078-0.713), presence of complications (OR: 3.903, 95% CI: 1.242-12.267) and perceived severity (OR: 3.403, 95% CI: 1.102-10.504) were found to be statistically significant with appropriate health care seeking behaviour.

However age, sex, family type, marital status, education, smoking habit, duration of disease, presence of co-morbidity, family history of diabetes, place of diagnosis, reaching time to health facility and family history of diabetes were not found significant with health care seeking behaviour.

As shown in Table 5, all the variables with p-value <0.2 were considered for binary logistic regression analysis (Supplementary File). Backward conditional regression method was used and only significant variables after adjusting confounders are shown.

Presence of alcohol consumption status was significantly associated (AOR: 4.063, 95% C.I: 1.295-12.754) with appropriate health care seeking behavior. Similarly, the presence of complication due to diabetes

Characteristics	Categories	Frequency n=102	Percentage (%)
Duration of disease	<5 years	70	68.6
	≥ 5 years	32	31.4
Presence of co morbidity	Yes	60	58.8
	No	42	41.2
Type of co-morbidity (multiple response)	Hypertension	47	46.1
	Asthma	3	2.9
	Skin disease	2	2
	Gastritis	9	8.8
	Others	5	4.9
Presence of complication	Yes	60	58.8
	No	42	41.2
Type of complications (multiple response)	Cardio vascular disease	3	2.9
	Neuropathy	8	7.8
	Nephropathy	2	2
	Retinopathy	38	37.3
	Foot damage	31	30.4
Family history of diabetes	Yes	41	40.2
	No	61	59.8
Relation with him/her N=41	Father	11	26.8
	Mother	11	26.8
	Both	1	2.4
	Others (Brother/sister)	18	43.9
Perceived severity	Yes	79	77.5
	No	23	22.5

Table 2: Disease profile of the respondents.

Characteristics	Categories	Frequency n=102	Percentage (%)
Place of diagnosis	Public health facility	50	49
	Private health facility	52	51
Process of diagnosis	Regular health check up	11	10.8
	After getting symptoms	61	59.8
	During medical screening at community level	30	29.4
Seek treatment upon diagnosis	Yes	91	89.2
	No	11	10.8
Type of treatment n=91	Oral medicine	86	94.5
	Traditional medicine	3	3.3
	Homeopathic	2	2.2
Reason for not going for treatment n=11	Financial constraints	1	9
	Self-medication	10	91
Place of treatment upon diagnosis	Public health facility	62	68.1
	Private health facility	29	31.9
Health institution near to home	Public health facility	96	94.1
	Private health facility	6	5.9
Time to reach the health facility (in minutes)	≤ 30	65	63.7
	>30	37	36.3
Waiting time in health facility(in minutes)	≤ 30	87	95.6
	31-60	4	4.4
Mean waiting time=18.63 ± 11.5 minutes			
Advice on medication	Yes	40	44
	No	51	56
Availability of free medication in PHC	Yes	33	32.4
	No	69	67.6
Involved in Health Insurance	Yes	0	0
	No	102	100
Family support during treatment	Yes	97	95.1
	No	5	4.9

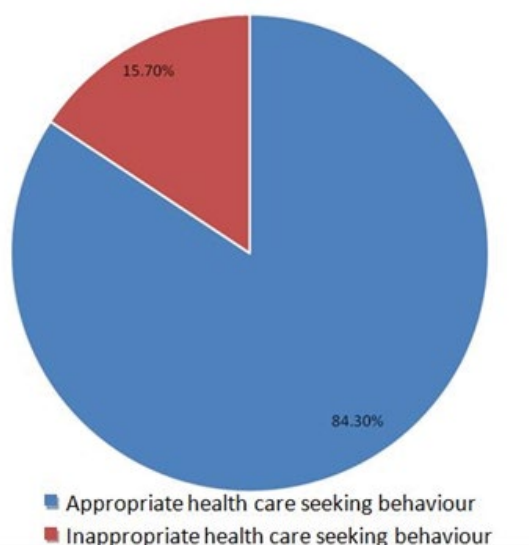**Table 3:** Health care seeking behaviour of the respondents.

Figure 1: Pie chart showing outcome of health care seeking behaviour.

Characteristics	Category	Health care seeking behaviour		Odds Ratio	95% Confidence interval
		Appropriate (%)	Inappropriate (%)		
Age	<50	33 (78.6)	9 (21.4)	2.065	0.702-6.075
	≥ 50	53 (88.3)	7 (11.7)		
Sex	Male	50 (82)	11 (18)	1.584	0.506-4.956
	Female	36 (87.8)	5 (12.2)		
Family type	Single	39 (86.7)	6 (13.3)	0.723	0.241-2.167
	Joint	47 (82.5)	10 (17.5)		
Socio-economic status	Upper class	35 (85.4)	6 (14.6)	0.874	0.291-2.626
	Lower middle	51 (83.6)	10 (16.4)		
Education	Literate	66 (83.5)	13 (16.5)	1.313	0.340-5.072
	Illiterate	20 (87)	3 (13)		
Smoking habit	Yes	14 (73.7)	5 (26.3)	0.428	0.129-1.423
	No	72 (86.7)	11 (13.3)		
Alcohol consumption	Yes	20 (69)	9 (31)	0.236	0.078-0.713
	No	66 (90.4)	7 (9.6)		
Duration of disease	<5 y	56 (80)	14 (20)	3.759	0.799-17.607
	≥ 5 y	30 (93.8)	2 (6.2)		
Presence of co-morbidity	Yes	51 (85)	9 (15)	1.133	0.386-3.328
	No	35 (83.3)	7 (16.7)		
Presence of complication	Yes	55 (91.7)	5 (8.3)	3.903	1.242-12.267
	No	31 (73.8)	11 (26.2)		
Family history of diabetes	Yes	35 (85.4)	6 (14.6)	1.144	0.381-3.435
	No	51 (51.4)	10 (9.6)		
Perceived severity about disease	Yes	70 (88.6)	9 (11.4)	3.403	1.102-10.504
	No	16 (69.6)	7 (30.4)		
Place of diagnosis	Public health facility	40 (80)	10 (20)	1.917	0.640-5.742
	Private health facility	46 (88.5)	6 (11.5)		
Health institution near to home	PHC	82 (85.4)	14 (14.6)	0.341	0.570-2.044
	Private hospital/clinic	4 (66.7)	2 (33.3)		
Time to reach the health facility	≤ 30 minutes	55 (84.6)	10(15.4)	0.939	0.312-2.833
	>30 minutes	31 (83.8)	6 (16.2)		
	No	-	-		
Family support during treatment	Yes	83 (85.6)	14 (14.4)	3.952	0.605-25.816
	No	3 (60)	2 (40)		

Table 4: Factors associated with appropriate health care seeking behaviour.

Steps	characteristics	Categories	β	AOR	95% CI for AOR	
					Lower	Upper
Step 6a (Refer Supplementary File)	Alcohol consumption	No	Ref			
		Yes	1.402	4.063	1.295	12.754
	Presence of complication	No	Ref			
		Yes	1.318	3.736	1.146	12.177
	Constant	-	0.2	1.221	-	-

*Significant at p value <0.05 at 95% CI.
*Input variables; Age of the respondent, smoking habit, alcohol consumption, duration of disease, perceived severity, family support, and presence of complication

Table 5: Binary logistic analysis of factors associated with appropriate health care seeking behaviour.

was also found to be significantly associated (AOR: 3.736, 95% C.I: 1.146-12.177) with appropriate health care seeking behaviour. Age of the respondent, smoking habit, duration of disease, perceived severity and family support during treatment were not found significantly associated with appropriate health care seeking behaviour in binary logistic regression analysis.

Discussion

The present study assessed the factors associated with appropriate health care seeking behaviour among the diabetic patients residing in Baniyani. This study found that majority (58.8%) of the respondents was aged more than 50 years. Similar findings were also found in the hospital based study conducted in Nepal [11]. This shows that the increasing age can be considered as risk factor for diabetes. About 68.6% of the patient had diabetes less than five years. It indicates that the prevalence of diabetes among rural people is increasing in recent years only. This result was supported by the study in Ghana [12].

This study found the process of being diagnosed as diabetic and identified that majority of the patients were diagnosed in health facility after getting symptoms of diabetes. Similar findings were demonstrated by the study conducted in rural area of India [13].

More than half of the respondents had disease other than diabetes. Hypertension was one of the mostly reported co-morbidity. This result was consistent to the findings of the study conducted in Africa [14]. In comparison to the study [15,16]. Our study showed inconsistent result about the presence of complications. Retinopathy was mostly reported complication by the respondents.

About 40.2% of the respondents had family history of diabetes; the result is comparable to international literature [17]. Contradicting to this result, another study shows higher prevalence of family history among diabetic patient [18]. Low prevalence of family history of diabetes among diabetic patient in our study may be because of lack of proper diagnostic facility in the rural area of Nepal, so they or their parents might not have the information about the presence of diabetes.

This study found 84.3% prevalence of appropriate health care seeking behaviour among diabetic patient. Similar finding was found by the study conducted among diabetic patient in Malaysia with prevalence of appropriate health care seeking behaviour 85.9% [10]. The operational definition and study design of both the study was similar with different socio economic status.

Study from rural area of Chandigarh showed that only 36.7% of the respondent seeks health care from public health facility [19]. On the contrary, our study showed that 68.1% of the respondents seek treatment from public health facility. This difference may be because of the availability of the public health facility as the only health facility near to our study area. International literature found that majority of the diabetic patient used modern allopathic medicine [19,20]. Similarly

our study also found that 94.5% of the patient used allopathic medicine. It may be because of the increased adherence towards the diabetic medication and awareness. Still, very few were using alternative medicines, may be because they did not have adherence towards modern medicine or modern medicine was not within their access.

Contradicting to the policy of government of Nepal to ensure accessibility of all the people to the health facility within thirty minute of walking distance, our study found that only 63.7% of the respondents were in access to the health facility within thirty minute of walk. Similar study conducted in eastern Nepal showed that 80% of the people had access to the health facility within thirty minute of walk [21]. This VDC is rural area of eastern Nepal, located near to Indian boarder, have only one health facility (primary health care centre), with a catchment area of six other VDCs. Hence, most of the people from periphery of the Baniyani VDC had to walk more than thirty minutes.

Reaching time to health facility and perceived severity about disease were not found to be associated with health care seeking behaviour in this study. This may be because of adequate knowledge about the importance of medication in diabetes among diabetic patient. This result is dissimilar to the study conducted in southwest Ethiopia [22] and South Africa [23]. Though perceived severity was not considered as predictive factor of health care seeking behaviour in our study, the odds of seeking health care by those who perceive diabetes as severe disease is two times more likely than those who do not perceive. An earlier study from Jamaica reported association between age, marital status and socio-economic status [24]. But in this study, these factors were not considered as significant predictor of health care seeking behaviour. This difference might be due to difference in time and setting of the study, the study in Jamaica being done six years ago with different socio-economic aspect and high sample size.

Presence of co-morbidity was not considered as factor of appropriate health care seeking behaviour, which was supported by the study [10]. It shows that those diabetic patients who were having co-morbidity may have financial burden, which restrict them from seeking modern health care facility. Unlikely to this result, study conducted by Dominguez et al. found co-morbidity as an important factor for health care seeking behaviour among diabetic patient [25]. The difference might be due to difference in level of awareness and availability of health care facility.

Unlikely to our study, family history of diabetes was considered as important factor of health care seeking behaviour by many studies [26-28]. It shows that those people with family history of diabetes may likely to practice self-medication, dietary modification or seek alternative health care.

After adjusting the confounders in regression analysis, our study revealed that alcohol consumption and presence of complication among diabetic patients were two strong determinants of appropriate health care seeking behaviour. The plausible reason may be because those

diabetic patients who consume alcohol were fully aware about the side effect of alcohol on blood sugar level. And those diabetic patients with complication may have severe condition so they were more concerned about their deteriorated health condition. This result was supported by famous health belief model which indicates that impact of illness and consequences predict health care seeking behaviour [29].

Although association between family support and health care seeking behaviour was not found but the analysis showed that patient with family support seek more appropriate health care. This may be because in our context, ill people are more or less dependent on their family member financially. In accordance to this result study from Sweden also revealed family support as determinant of health care seeking behaviour [8].

Our study did not considered smoking status as predictive factor, which was supported by the result of the study conducted in Philippines [25].

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Conflicts of Interests

The authors declare that they have no competing interests.

Authors' Contributions

Sailendra Thapa, Nilambar Jha, Prajjwal Pyakurel conceived the study design, Sailendra Thapa and Dharani Dhar Baral coordinated for acquisition of data, analysis and interpretation of data. Sailendra Thapa drafted the manuscript and Nilambar Jha, Dharani Dhar Baral, Prajjwal Pyakurel critical revised the manuscript. All authors read and approved the final manuscript.

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