RESEARCH ARTICLE

TYPE 2 ADULT DIABETIC PATIENTS SOURCE OF INFORMATION ATTENDING CHRONIC FOLLOW UP UNITS OF DESSIE REFERRAL HOSPITAL, NORTHEAST ETHIOPIA

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ARTICLE INFO	ABSTRACT
	Background: Health information obtained from different sources has an impact on diabetes patient health care outcomes. Time to time there is a growing concern over the quality of health information sources used by diabetic patients. The degree to which diabetes patients follow advice as self-care behaviours determined by the source of information they got through various methods. **Objective**: To asses type 2 adult diabetic patients source of information on chronic follow up units of Dessie referral hospital. **Method:** Cross-sectional study design was conducted in diabetic chronic follow up units of Dessie referral hospital from May 1 to 30, 2018. Systematic random sampling method was used to select participants by using patient registration book as a sampling frame and the first study subjects was selected by lottery method. Data was collected by interviewer administered questionnaire. Epidata 3.1 and SPSS version 23 software were applied for data entry and analysis respectively. **Results:** Among respondents 89.5% of them source of information about diabetes was medical staffs, 18.5% from media and the remaining 18.5% from friend/family. Among respondents 45.7% would like to access information's about diabetes mellitus through handouts/leaflet, 25.0% through video/tapes, 29.3% through both handouts/leaflets and video/tapes and 11.4% through education during appointment. **Conclusion:** In this study the role of media and friends/family were low to aware diabetes mellitus patients so that attention should be given by Ethiopian broadcast corporations, health care professionals and diabetic associations. Source of information should be given for diabetic patients in the form of leaflet and videos.

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INTRODUCTION

Diabetes mellitus is a metabolic disorder in which there is deficiency of insulin production or resistance of organs to the effect of insulin characterized by raised blood sugar level. Type two diabetes mellitus account for 90% to 95% of all diabetes (American Diabetes Association, 2019). Diabetes mellitus is a common health problem that increases its burden on medical and economic consequences at individual, family, country and at world wide level. Worldwide prevalence of diabetes in adults aged 20–79 years was estimated to be 6.4%, affecting 285,000,000 adults in 2010, and will increase to 7.7% that could be 439,000,000 adults in the year 2030.

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Between 2010 and 2030, there will be a 69% escalate in numbers of adults with diabetes in under developing countries and a 20% raise in developed countries (Shaw et al., 2010). Different studies indicated that diabetic patients had poor practice towards self care (Chali *et al.,* 2018; Berhe et al., Abate *et al.,* 2018). Diabetic patients also had low level of knowledge about diabetic mellitus (Upadhyay *et al.,* 2008; Adejoh, 2014; El-Khawaga *et al.,* 2015). Diabetic patients with less frequent information were less likely to take diabetes self care (Ayele *et al.,* 2012) but participants seeking health-related information were more conscious about their diabetes self-care practice (Jamal *et al.,* 2015). Routine health information should be prepared and disseminated through trained and experienced health professional by considering the diabetic patients educational background and years of suffering from the disease (Amente *et al.,* 2014).

8428

Sisay Gedamu and Abebe Dires, Type 2 adult diabetic patients source of information attending chronic follow up units of dessie referral hospital, northeast Ethiopia

A study done in Saudi showed the major sources of information were medical staffs (68%) followed by television (12%) and newspaper (10%). However 10% received information from friends and relatives (Saadia et al., 2010). In Pakistan the main source of information were doctor (78%), relatives/friends (10%) and media (4%) (Naheed, 2010). A research carried out on association of online health information–seeking behavior and self-care activities among type two diabetic patients in Saudi Arabia revealed that most participants their primary source of health-related information was their physician (62.8%) followed by television (45.1%), family (32.8%), newspapers (29.1%) and internet (27.9%). Primary topics participants searched were therapeutic diet for diabetes, symptoms of diabetes and diabetes treatment 57%, 54% and 52% respectively (Jamal *et al.*, 2015). A study done in Felege Hiwot hospital, Northwest Ethiopia majority (85%) of the respondents reported that their source of knowledge about diabetes was medical staffs. The remaining participants said that friends/relatives and media 9% and 6% respectively as their source of information (Feleke et al., 2013). In Pakistan from those who had received diabetes education 65% received only 5 minutes from the doctor, while only 4% received more than 15 minutes (Naheed, 2010).

In Felege Hiwot hospital the time their doctors devote for them was five minutes for 58% of patients, ten minutes for 27% and more than ten minutes for 9% of respondents. Among the total respondents in Felege Hiwot hospital 54%, 48%, 32% received explanation about diet, exercise and regular check-up from health professionals. Twenty nine percent of respondents reported that they received motivation from health professional about self-care of diabetes (Feleke et al., 2013). Patients with type 2 diabetes mellitus have different physical activity level and behavior related to exercise so that there is a need to educate and counsel the low active patients about the importance of exercise and for active patients about the appropriate management of regular exercise with regard to its type, intensity, frequency and duration in order to obtain the best outcomes with the lowest rates of hypoglycemia (Duarte *et al.*, 2012; Edah *et al.*, 2015; Sorato *et al.*, 2016). Type 2 diabetes mellitus patient dietary non-compliance is common so that dieticians need to improve their skills and use more effective intervention approaches in providing dietary counselling to diabetic patients (Tan *et al.*, 2011). Among respondents 81.0% and 33.4% of them would like to receive information through leaflet/handout and audio/tapes respectively (Feleke *et al.*, 2013). In Ethiopia, there is limited data with regard to sources of information for type two diabetes mellitus patients. That is why this study was tried to assess type two diabetic patients' sources of information about diabetes on chronic follow up units of Dessie referral hospital, Northeast Ethiopia.

MATERIALS AND METHODS

Study area and period: The study was done in Dessie referral hospital which is found in Dessie town, Amhara region, Northeast Ethiopia, 401km away from Addis Ababa, the capital of Ethiopia and 480 km from Bahirdar, the capital of Amhara regional state. This hospital gives many services including preventive, curative and rehabilitative care for patients coming from all woredas and zones of Eastern Amhara and Afar regional state. The study conducted in chronic follow up units of Dessie referral. This study was conducted from May 1 - 30, 2018.

Study design: Hospital based cross sectional study design was employed.

Population: Patients who diagnosed with type two adult diabetes and made follow up for at least three months in Dessie referral hospital chronic follow up units were included but critical ill and hearing impairment patients were excluded from the study.

Sample size determination: The sample size was determined by using single population proportion formula, taking source of information for type 2 diabetes patient to be medical staff 85% in Felege Hiwot hospital previous study (Feleke *et al.*, 2013) with the assumption of 95% confidence interval and 4% margin of error.

$$n = \frac{(z\ a/2)^2\ p\ (1-p)}{d^2} = \frac{(1.96)^2 0.85(1-0.85)}{(0.04)^2} = 306$$

Then by adding 10% for non response rate the final sample size was 336 type 2 adult diabetic patients.

Sampling technique: A systematic sampling technique was used to select type 2 diabetes patients. The interval value 'K' calculated by total population (N) divided by total sample size (n). Using the K value the participants selected by using patient registration book as a sampling frame and the first study subjects was selected by lottery method.

Data collection tools and procedure: Data was collected by using an interviewer administered questionnaire. The source of information questionnaire was taken from another similar study (Feleke et al., 2013). The English version questionnaire translated to local language (Amharic) by individuals who have good ability of the two languages then translated back to English by different person to ensure consistency. Training was given for data collectors and supervisor. A week prior to the actual data collection, the questionnaire was pre-tested by 10% of the sample size on type 2 diabetic patients in Borumeda hospital which was not included in the actual data collection. Findings of the pre-test were incorporated to clarify the tool before the actual data collection period.

Data analysis: The collected data was entered in to epidata version 3.1 and export to SPSS Version 23 for analysis. Descriptive statistic including frequency distribution and percentage was done and presented in the form of tables.

Ethical consideration: Ethical clearance was obtained from Wollo University, college of medicine and health sciences research review committee. Official letter was written to Dessie referral hospital. Written informed consent was obtained from all study participants after information is provided about purpose of the study, non- invasiveness of the data collection procedure, confidentiality of the information and respondents was reassured that they would be anonymous.

RESULTS

Socio-demographic characteristics of the participants: Out of the total sample size (n=336), actually 324 type 2 diabetic patients participated in the interview that gives 96.4% response rate. The study showed that 88(27.2%) of the participants found in the age category of 40-49 age group. Among 324 type 2 diabetic patients who completed the interview questionnaires, 179(55.2%) were males and 145(44.8%) of them were females. Three fourth of the participants 245(75.6%) were married and 88(27.2%) had no formal

Table 1. Socio-demographic characteristics of type 2 diabetic patients attending chronic follow-up units of Dessie referral hospital, Northeast Ethiopia

Variables	Responses	Frequency (n=324)	Percentage (100%)
Age	<40	59	18.2
	40-49	88	27.2
	50-59	64	19.8
	60-69	70	21.6
	≥70	43	13.3
Sex	Male	179	55.2
	Female	145	44.8
Marital status	Married	245	75.6
	Single	22	6.8
	Widowed	38	11.7
	Divorced	19	5.9
Educational level	No formal education	88	27.2
	Can read and write	85	26.2
	Primary school	50	15.4
	Secondary school	25	7.7
	College/university	25	7.7
	College/university graduate	51	15.7
Occupation	Student	11	3.4
	Self employed	133	41.0
	Government employed	58	17.9
	Unemployed	33	10.2
	House wife	70	21.6
	Retired	19	5.9
Monthly income (ETB)	≤999	151	46.6
	1000-1999	62	19.1
	2000-2999	48	14.8
	≥3000	63	19.4

Table 2. Source of information for type 2 diabetic patients attending chronic follow-up units of Dessie referral hospital, Northeast Ethiopia

Variables	Frequency(n=324)	Percentage (100%)
Source of information about diabetes*		
Health professional staffs	290	89.5
Media	60	18.5
Relatives/friend	60	18.5
Others	4	1.2
Don't get information	6	1.9
Times doctor devote to discuss diabetes during first diagnosis		
Ten minutes	57	17.6
Greater than ten minutes	55	17.0
Twenty minutes	34	10.5
More than twenty minutes	49	15.1
The doctor did not discus	17	5.2
I don't remember	112	34.6
Times doctor devote to discuss diabetes during follow up		
Less than Five minutes	35	10.8
Five minutes	121	37.3
Ten minutes	76	23.5
More than ten minutes	66	20.4
The doctor does not discus	26	8.0
Who diagnosed you first?		
Specialist doctor	38	11.7
General practitioner	95	29.3
Health officer	60	18.5
Nurse	67	20.7
Don't remember/don't know	64	19.8
Does your doctor explain about diet?		
Yes	284	87.7
No	22	6.8
Don't know	18	5.6
Does your doctor explain about exercise?		
Yes	260	80.2
No	41	12.7
Don't know	23	7.1
How would you like information given to you about diabetes?*		
Handouts or leaflet	148	45.7
Videos or tapes	81	25.0
Both handouts/leaflet and videos/tapes	95	29.3
Education during appointment	37	11.4

* Multiple response questions

education. The result on occupation showed that 133(41.0%) were self-employed and with regard to monthly income almost half of the patients 151(46.6%) got less than 1000 Ethiopian birr. See Table 1.

Source of information for type 2 diabetic patients: For majority of the respondents 290(89.5%) the source of information about diabetes was health professional staffs, 60(18.5%) from media and the remaining 60(18.5%) from friend/family. Six (1.9%) of the participants reported that did not get information. At first diagnosis the time devoted by the physician to discuss about diabetes was more than 20 minutes for 49(15.1%) of respondents, twenty minutes for 34(10.5%), greater than ten minutes for 55(17.0%), ten minutes for 57(17.6%) of the respondents, but 112(34.6%) of the respondents don't remember the time and 17(5.2%) of type 2 diabetic patients reported that the doctor did not discuss about diabetes. Most of the doctors 284(87.7%) and 260(80.2%) explain about diet and exercise, respectively. Among respondents 148(45.7%) would like to access information's about diabetes through handouts or leaflet, 81(25.0%) through video or tapes, 95(29.3%) through both handouts/leaflets and video/tapes and 37(11.4%) through education during appointment. (See table 2)

DISCUSSION

The study examined the different source of information for type two diabetic patients about their disease. In the current study the main source of information about diabetes mellitus was health professional staffs (89.5%). It was supported by a study carried out in Felege Hiwot hospital in which 85% of source of information was medical staffs (Feleke *et al.,* 2013). But it was higher than study conducted in Saudi Arabia (62.8%), another study in Saudi (68%) and Pakistan (78%) of the participants' reported that the source of information were health professionals (Jamal *et al.,* 2015; Saadia *et al.,* 2010; Naheed, 2010). The possible explanation for difference might be due to difference in training opportunity and personal characteristics of the health professionals between various studies. This study revealed that the source of information from media (18.5%), friend and family together (18.5%).

This is higher than a study done in Pakistan which showed media and relatives/friends contribution were as a source of information in 4% and 10% respectively. In Saudi friends and family contribution as a source of information was 10% (Saadia *et al.,* 2010). This indicates that the role of media, friends and family were low to aware diabetes mellitus patients about their diseases across different studies so that a solution should be made in this regard. In the present study 45.7% of the participants would like to get information in the form of handouts or leaflet and 29.3% of them needs in the form of both handouts/leaflet and videos/tapes. This is lower than a study done in Felege Hiwot hospital which reported that 81% of the respondents want in the form of handouts or leafle t (Feleke *et al.,* 2013). Among respondents 87.7% and 80.2% of them received explanation about diet and exercise by the doctors respectively. This was higher when we compare that of Felege Hiwot hospital study in which 54% and 48% got explanation about diet and exercise respectively from doctors (Feleke *et al.,* 2013). The possible suggestion for this difference could be in our study area doctors devote more time to discuss about diabetes for their patients as compared to

Felege Hiwot hospital during first diagnosed and follow up cares.

Limitations of the study: The possible limitation of this study could be the authors did not assess factors which affect diabetic patients' sources of information about their disease. The findings in this study were based on quantitative method only that lacked triangulation with other methods like focus group discussion and in-depth interview of qualitative data.

Conclusion and Recommendation

In this study the role of media and friends/family were low to aware diabetes mellitus patients about their diseases. Therefore attention should be given to increase the role of media and friends/family by Ethiopian broadcast corporations, Dessie referral hospital, health care professionals and diabetic associations. Source of information about diabetes mellitus should be prepare and given for diabetic patients in the form of leaflet/handouts and Videos/ tapes. Health care professionals should discuss about diet and exercise for all type 2 diabetic patients and their families. Doctors should devote more time to discuss with diabetic patients during first diagnosis and follow up care. Researchers should do further study by using both qualitative and quantitative methods to address the unreached problems.

Conflicts of Interest - The authors declare that we have no competing interests.

Authors' contributions

SG: Initiated the idea of the research, develop the proposal, recruit data collectors, data entry, data analysis, interpretation of the data and writing the manuscript. AD: Gave constructive comments during proposal development and final research to increase quality of the study, data entry, data analysis and revised the manuscript. Both authors read and approved the final manuscript.

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