

Source of knowledge regarding diabetic retinopathy among Sudanese adult diabetic patients at Makkah Eye Complex- Khartoum Sudan; 2014

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Abstract: Diabetes Mellitus (DM) is a chronic illness with prevalence of 171 million worldwide; as a result most of body organs and particularly the eye sensitive tissues are affected. Recently diabetes was termed as one of main causes of blindness. There are about 126 million people worldwide affected by diabetic retinopathy (DR) with 37 million patients suffering vision threatening DR. However, most of people are unaware of ocular complication due to long term DM.

Methods: This was a cross sectional hospital-based study included 309 subjects ages 15 years and above who attended Makkah Eye Complex. A standardized pre-tested and pre-coded questionnaire was used for collecting the required data. The study was ethically approved from the Institutional Review Board of Al-Neelain University and Khartoum State Ministry of Health; with the permission of Makkah Research Center (MRC).

Results: Regarding awareness about which part of the eye affected by diabetic retinopathy 46.6 % of the participants stated the retina while 40.1 % (124) mentioned that they did not know. Regarding awareness about treatment of diabetic retinopathy; 39.91% of the participants mentioned medication, 25.82% of them mentioned surgery while 23.47% said by laser. The source of knowledge among subjects was found to be as follows; 36.2% from media, 18.1% from friends and relatives while 17.8% from physicians, general practitioners and ophthalmologists.

Conclusion: The number of diabetes mellitus patients who received advice (at the point of disease detection) from doctors or medical personnel to see an ophthalmologist was a minority, although it is a very valuable advice since delayed detection of retinopathy leads to serious outcomes and complicates the management. Awareness program and counseling for diabetic patients towards the fact that diabetic retinopathy is manageable disorder if intervention took place in time.

Background:

Diabetic retinopathy (DR) is a serious, irreversible eye disease that can occur in people with diabetes, and is the leading cause of blindness around the world. Patients are often unaware of the seriousness of DR, as well as assessment and management of DR patients⁽¹⁾. High prevalence increase of DR appears to be greater in developing countries. The etiology of this increase involves changes in diet, with higher fat intake, sedentary lifestyle changes, and decreased physical activity.⁽²⁾ An increasing prevalence of diabetes is occurring throughout the world.⁽³⁾

The patients' ages at the onset of diabetes ranged from 20–72 years, with the majority of patients (44%) developing diabetes at the age between 40–50 years. Female to male ratio was 1.9:1. 46.2% of patients were obese and a family history of first degree relatives was obtained in 63% of patients.⁽⁴⁾ Among persons with Diabetes Mellitus (DM), the prevalence of DR did not vary substantially by age group or gender and their pattern was inconsistent. However, the general population prevalence of DR clearly increased with age.⁽⁵⁾ It is known that a substantial number of persons with DM are unaware that they have DM, and that such persons may have diabetic retinopathy.⁽⁶⁾ Patients with diabetic retinopathy have more negative beliefs about diabetes than those without retinopathy and we identified strong and consistent associations between negative beliefs and psychological outcomes regardless of the presence of other diabetic complications.⁽⁷⁾ Communication approaches are considering people vary widely in their socio-economic conditions, traditions, attitudes, believe and level of knowledge that uniform communication approach may not be viable. Its primary goal is to create awareness of the problem in those whom it reaches and to begin to increase their level of knowledge. Mass media, such as television, newspapers and the radio can be effectively used to increase the level of knowledge in the community about DM and DR. Posters displayed in hospitals or public meeting places have the same advantages of being widely seen, but also carry a disadvantage. Since most of the targeted population may be illiterate or visually impaired and poster message may not be clearly transmitted, it is designed to help change the opinions and attitudes of the targeted population.⁽⁸⁾

Objective: The aim of the study is to assess the common sources of awareness regarding diabetic retinopathy amongst Sudanese Adult diabetic patients.

Justification Early detection of diabetes mellitus and diabetic retinopathy leads to significant reduction in progression of diabetic retinopathy by early treatment with laser photocoagulation.

Research questions: Is an increased knowledge of diabetic eye diseases related to reduction in diabetic retinopathy complications?

Research Methodology: This was a cross sectional hospital-based study conducted in consented 309 adult Sudanese diabetic patients; of 15 years old and above, who attended Makkah Eye Complex (MEC) as part of Al Basar International Foundation, Khartoum, Sudan. A standardized administered pre-tested and pre-coded questionnaire was used for collecting the required data; from 16 August 2014 to 02 December 2014. The study was ethically approved by the Institutional Review Board of Al-Neelain University and Makkah Research Centre. Data were analyzed using SPSS version 20.0.0.

Results: It was noticed that 39.5 % (122) of subjects fall within the age group (55 – 64) 32.4% (100) fall within the age group (45 – 54). The average age was found to be 59.6 years.

It was noticed that males constituted 54% (168) of the total number of the subjects.

Characteristics		Frequency	Percentage
Age	25-34	4	1.2
	35-44	15	4.9
	45-54	68	22.0
	55-64	122	39.5
	65+	100	32.4
	Total	309	100
Gender	Male	168	54.4
	Female	141	45.6
	Total	309	100

Table 1: Awareness of diabetes ocular complications

Regarding awareness about which part of the eye affected by diabetic retinopathy 46.6 % (144) of the participants said the retina while 40.1%(124) said they don't know. Figure (I) below clarify:

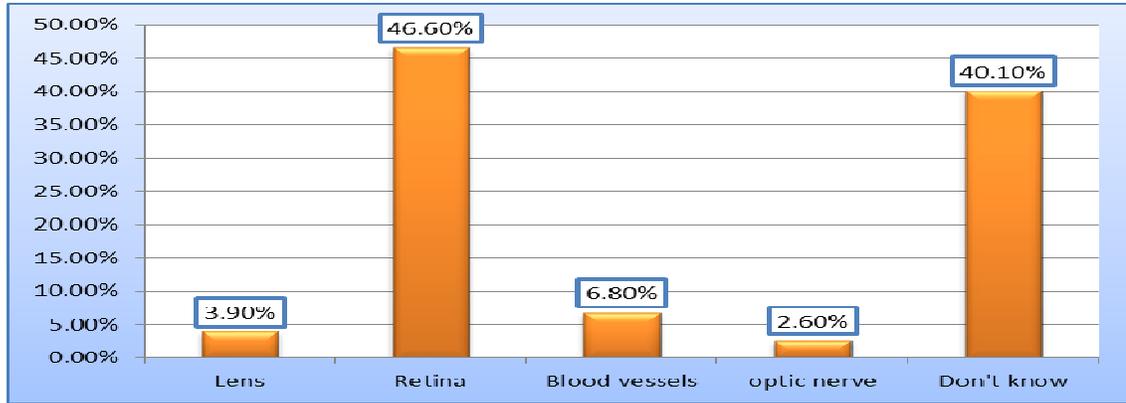


Figure No (I) Awareness of which eye part affected by diabetic retinopathy

Source of knowledge among participants was found to be 30.9% and 30.5% for PDR and CSME respectively. Table (2) below shows

Table (2): Source of knowledge about diabetes mellitus & retinopathy

			media	physician or DR	eye specialist	paramedic or health worker	friends & relatives	other	
Type of Diabetic retinopathy	NPDR	No.	22	6	9	2	10	1	50
		%	8.8%	2.4%	3.6%	0.8%	4.0%	0.4%	20.1%
	PPDR	No.	15	12	5	3	8	3	46
		%	6.0%	4.8%	2.0%	1.2%	3.2%	1.2%	18.5%
	PDR	No.	24	17	11	6	14	5	77
		%	9.6%	6.8%	4.4%	2.4%	5.6%	2.0%	30.9%
	CSME	No.	28	13	12	1	17	5	76
		%	11.2%	5.2%	4.8%	0.4%	6.8%	2.0%	30.5%
Total	No.	89	48	37	12	49	14	249	
	Total %		35.7%	19.3%	14.9%	4.8%	19.7%	5.6%	100.0%

P-value = (0.748)

Awareness about treatment of diabetic retinopathy 39.91% (85) of the participants said by medication, 25.82% (55) mentioned by surgery while 23.47%(50) said by laser. Figure (II) below clarify.

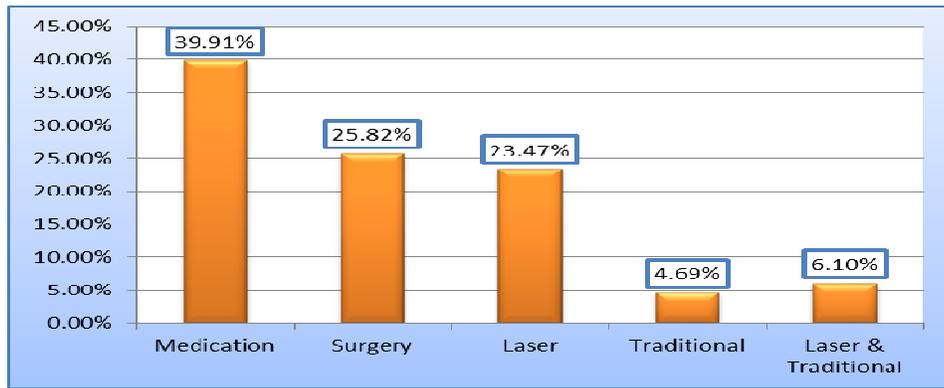


Figure No (II) awareness regarding treatment of diabetic retinopathy

62.5% (193) of the patients said we cannot prevent blindness once the eye affected by diabetic retinopathy. Table 3 shows

Table (3): Awareness of blindness avoidance if the eye affected by diabetic complications

Awareness of blindness avoidance if the eye affected by diabetic complications	Frequency	Percentage
Yes	116	37.5%
No	193	62.5%
Total	309	100%

When the participants asked about their awareness regarding risk factors of diabetic retinopathy 51.5% (159) said they are aware while 48.5% (150) said they are unaware. Figure (III) below clarify

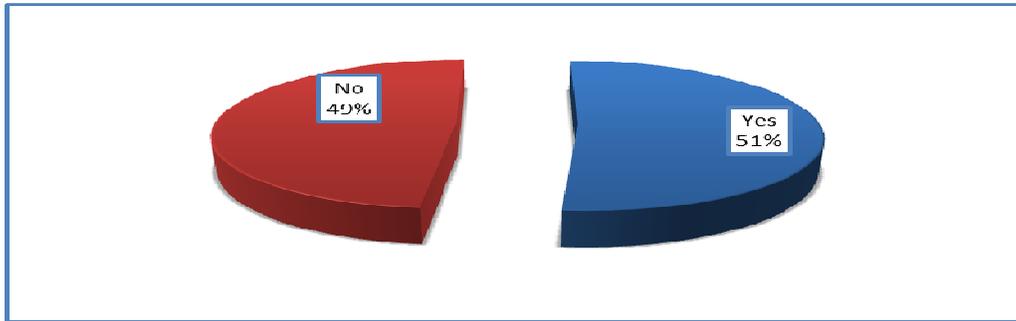


Figure No (III) Awareness of risk factors of diabetic retinopathy

Source of awareness among subjects found to be 36.2% (112) from media, 18.1% (56) from friends and relatives while 17.8% (55) from physicians, general practitioners and ophthalmologists. Figure (IV) below shows.

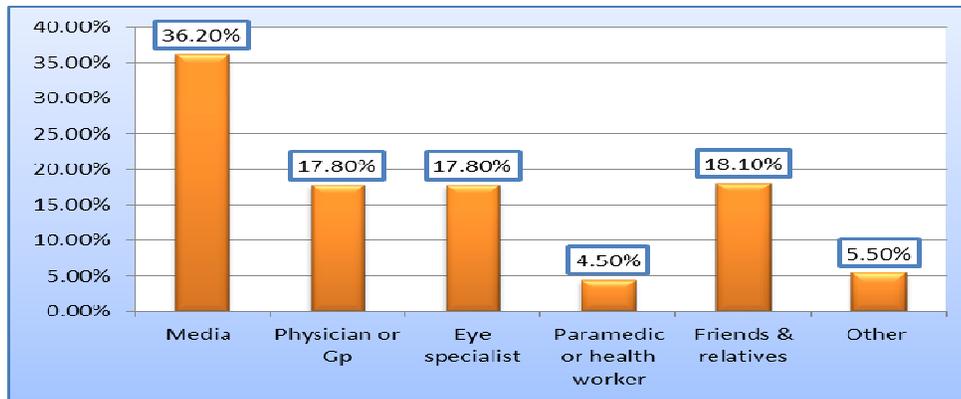


Figure No (IV) Source of awareness regarding diabetic retinopathy

Discussion:

Half of the participants were found to be aware of the basic diabetes mellitus ocular complications, their source of knowledge was mainly from media, friends and relatives which shows absence of awareness programs and role of primary eye health care, Despite of the study showed high proportion of participants (40.1%) do not know which part of the eye is mainly affected by DM, on the other hand 50% of them are aware regarding the risk factors of developing DR, all and above , half of the patients believe in that whenever the eye affected by DR blindness is a definite fate and no management or intervention will help. These facts indicate deficiency in counselling process ought to be conducted by ophthalmologists, paramedics or eye care health workers, since they are the main eye care education and awareness providers; they are missing a precious chance because the audience are the DR patients will carefully receive the health educational message and may convey it to other patients and community members.

The study showed that the number of diabetes mellitus patients who received an advice (at the point of disease detection) from doctors or medical personnel to see an ophthalmologist were few, although this is a very valuable advice since delayed detection of retinopathy leads to irreversible complications.

From the study it was found among all types of diabetic retinopathy patients the majority believe that blindness is the fate of retinopathy regardless of proper follow up and treatment, and this is due to traditional believes and lack of sophisticated ophthalmic services in the past since they witnessed many cases of blindness among diabetic patients. The study showed poor awareness about ocular diabetic complications and diabetic retinopathy, most of the participants furnished with knowledge about DM and DR via media and relatives, it is clearly recognized that no definite awareness strategies was adopted. The role of general practitioners and paramedics is not tangible since they represent 17.5% and 4.5% respectively indicating a defect in awareness program and policy since these are the pillars of health education among the community as mentioned by K. Kaliyaperumal regarding communication approaches. ⁽⁸⁾ Among all participants media was the main source of knowledge and amazingly physicians, paramedics and health workers was the least contributors in conveying knowledge, beside that the level of knowledge is far greater in advanced retinopathy (PDR and CSME) patients, indicating that their knowledge acquired by repeated visits to ophthalmic facilities. (Table 2)

The advanced diabetic retinopathy patients are more knowledgeable, indicating that awareness programs are not sufficient, knowledge acquired by repeated visits rather than the efficiency of the awareness programs. The role of medical cadre in awareness is the least among other sources pointing to the fact that the health system is not addressing awareness properly.

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