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RESEARCH ARTICLE

KNOWLEDGE OF DIABETIC COMPLICATIONS AND PRACTICE OF ROUTINE MEDICAL CHECK-UP AMONG DIABETICS (>10 YEARS) IN THE FIELD PRACTICE AREA OF GOVERNMENT MEDICAL COLLEGE, AMRITSAR

Dr. Ramanpreet Kaur, Dr. Samriti Sood, Dr. Mohan Lal and Dr. S.S Deepti

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Abstract

Context: Awareness about diabetic complications and regular medical check-up are essential for prevention, early detection and treatment of diabetic complications.

Aims & Objectives: 1. To assess the knowledge about diabetes complications among diabetic patients (>10 years).

2. To evaluate the practices of routine medical check –up among Diabetics (>10 years).

Settings and Design: A community based cross-sectional study was conducted in rural and urban field practice areas of Government Medical College, Amritsar.

Methods and Material: A total of 200 diabetic patients who had diabetes equal to or more than 10 years of duration were interviewed using pretested and predesigned questionnaire Statistical analysis used: Data such collected were analyzed and Chi-square/ Yates correction was used to know the level of significance at **P** < 0.05.

Results: Out of 200 respondents, 50% (100/200) were from urban area and 50% (100/200) were from the rural area. In both urban and rural areas, majority were literate and unemployed. The mean age of diabetic respondents was 61.08 years with a male to female ratio of 1.1:0.9. 44.5%(89) of the respondents were aware of diabetic complications(P<0.05).92%(82), 89%(79), and 73%(65) of respondents had good knowledge about complications of Eye, Kidney and cardiac disease while respondents knowledge of Stroke and Nephropathy was inadequate i.e. 28%(25),47% (42) respectively. Only 25% (51) had followed definite routine for examination ,Out of which 61%(31) were doing health check up every 3 monthly and 27%(14) were doing every 6 monthly and 6(12%) were doing every yearly(P<0.05).

Conclusions: The practice of regular medical check-up was poor among diabetic patients, and this may be due to inadequate knowledge about specific diabetic complications.

Introduction:-

Diabetes mellitus (DM) is a fast-growing global problem with huge social, health, and economic consequences because of premature illness and death due to its complications(1). It accounts to 50-80% of deaths among people with diabetes (2).

Corresponding Author:- Dr. Anamika Soni

Lack of awareness about diabetic complications combined with insufficient access to routine health check up leads to complications such as blindness, amputation and kidney failure among diabetics(3).

If appropriate management of diabetes is achieved then these life threatening complications can be delayed or prevented. So, aim of the study to assess the Knowledge of Diabetic Complications and Practice of Routine Medical Check-up among Diabetics (>10 years).

Subjects and Methods:-

The cross sectional study was conducted in both rural and urban areas of district, Amritsar. Duration of the study was from 1st January 2017 to 31st December 2017. A list of all the marked houses in village Nagkalan and adjacent villages was obtained. A list of all the wards covered by the UTHC (Urban Training Health Centre) was procured. Out of those one ward was selected randomly by lottery method and similarly the next to study the diabetic patients.11000 population was covered i.e. 7500 from rural and 3500 from urban area respectively. In total 200 diabetic patients who had diabetes equal to or more than 10 years of duration was included systematically in the study. Out of which 100 was from the rural and 100 from urban field practice areas. House to house visit was made by investigator with prior information through field staff. Every house was visited and after explaining the purpose of study and the informed written consent was taken from the participant who had diabetes equal to or more than 10 years of duration.

Study tool:

A pretested, predesigned, semi-structured questionnaire schedule in local language consisting of items on the demographic profile including age, sex, religion, education, occupation, etc., was used. Questionnaire consisted of items to assess the knowledge about complications and practice of routine medical check -up among type 2 diabetes mellitus patients. All the questions were asked in vernacular language and pre tested, semi-structured Proformas were filled in.

Inclusion criteria

The person had diabetes equal to or more than 10 years of duration with or without complications.

Diagnosed diabetic patient for this study was defined as one fulfilling any of the following criteria:

1. The patient had a documented evidence of a diagnosis of diabetes (prescription slip/lab reports by qualified Practitioner)
2. The patient was taking regular medications for diabetes.
3. If the patient was not fulfilling any of the above criteria, then those with random blood sugar more than 200 mg/dl were included in the study.

Exclusion criteria

1. The person had diabetes less than 10 years of duration with or without complications.
2. The patient who were not available after second visit did not included in the study.
3. The patient who did not give consent to the study.

Statistical Analysis:

The data thus collected was compiled and analyzed statistically using the ratios, proportions and chi square/ Yates correction was used as test of significance with $P<0.05$.

Ethical issues:

All patients were explained the purpose of the study and confidentiality was assured. A written informed consent was taken from each patient before collecting data. The study was approved by the Institutional Ethical Committee of Government Medical College, Amritsar.

Results:-

Demographic profile of participants:

Of 200 participants, 50% (100/200) were each from the urban and rural area. In urban area, there were 60% (60/100) males and 40% (40/100) females while in rural area there were 45% (45/100) males and 55% (55/100) females who participated in the study. In rural areas, majority were Sikh (81%; 81/100) and in urban area, majority were Hindu

i.e. (71% i.e. 71/100), literate (R-77%; 77/100 and U-94%; 94/100) and unemployed (R-55%; 55/100 and 42%; 42/100). Mean age of diabetic respondents were 61.08 years in both rural and urban areas as given in Table 1.

Table1:- Demographic characteristics of diabetic respondents:

Characteristics	Rural n=100(%)	Urban n=100(%)	Total n=200(%)
Gender			
Male	45(45%)	60(60%)	105(53%)
Female	55(55%)	40(40%)	95(47%)
Religion			
Hindu	6 (6%)	71(71%)	77(39%)
Sikh	81(81%)	29(29%)	110(55%)
Others	13(13%)	0(0%)	13(6%)
Education			
Illiterate	33(33%)	6(6%)	39(20%)
Literate	67(77%)	94(94%)	161(80%)
Occupation			
Unemployed	55(55%)	42(42%)	97(48.5%)
Employed	45(45%)	58(58%)	103(51.5%)
Age			
31-40	5(5%)	4(4%)	9(4%)
41-50	20(20%)	16(16%)	36(18%)
51-60	39(39%)	37(37%)	37(37%)
61-80	36(36%)	43(43%)	79(40%)

2. Knowledge regarding diabetes mellitus complications:

When the respondents were asked if they know about complications of diabetes mellitus, 31% (31/100) in rural area and 58% (58/100) in urban area answered positively but it was found statistically significant (P<0.05) as shown in Table2.

Table 2:- Distribution of diabetic respondents on the basis of knowledge about complications of diabetes (n=200):

Knowledge	Diabetic Respondents		Total (%)	P Value
	Rural (%)	Urban (%)		
YES	31(31%)	58(58%)	89(44.5%)	
NO	69(69%)	42(42%)	111(55.5%)	
Total	100(100%)	100(100%)	200(100%)	<0.05

Out of total 200 diabetic respondents, 44.5% (89) had knowledge about diabetic complications. Among those, 92%(82/89) i.e. R-90%(28/31), U-93%(54/58) and 89%(79/89) i.e. R-71%(22/31) ,U-98%(57/58) and 73%(65/89) i.e. R-74%(23/31),U-72%(42/58) of respondents had good knowledge of Eye disease, Kidney disease and cardiac complications while respondents knowledge of Stroke and Neuropathywere inadequate i.e. 28%(25/89),47% (42/89) respectively as shown in table 3

Table 3:- Distribution of diabetic respondents on the basis of detail knowledge about complications of diabetes (n=89):

Knowledge	Diabetic Respondents		Total (89)
	Rural (31)	Urban (58)	
Stroke	9(29%)	16(28%)	25(28%)
Neuropathy	8(26%)	34(59%)	42(47%)
Cardiac complication	23(74%)	42(72%)	65(73%)
Nephropathy	22(71%)	57(98%)	79(89%)
Eye disease	28(90%)	54(93%)	82(92%)

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3.Practice of Routine Medical Check-up among Diabetics:

When respondents were asked about routine health check-up followed for examination, Out of total 200 diabetic respondents,64%%(127/200) i.e. R-64%(64/100),U-63%(63/100) had not followed definite routine for examination and only 25%(51/200) i.e. R- 21%(21/100),U- 30%(30/100) had followed definite routine for examination as shown in table 4.

Table 4:- Distribution of diabetic respondents on the basis of routine followed for examination (n=200):

Routine followed	Diabetic Respondents		Total (%)
	Rural (%)	Urban (%)	
No definite routine	64(64%)	63(63%)	127(64%)
Irregular	15(15%)	7(7%)	22(11%)
Regular	21(21%)	30(30%)	51(25%)
Total	100(100%)	100(100%)	200(100%)

When respondents i.e. 25% (51/200) were asked about frequency of regular routine followed for examination then 61% (31/51) i.e. R-28% (6/51), U-83% (25/51) were doing quarterly and 14(27%) i.e. R-62%(13/51),U-83%(25/51) were doing half yearly and 6%(3/51) i.e. R-5%(1/51),U-7%(2/51) were doing on yearly basis and results were found statistically significant as shown in table 5

Table 5:- Distribution of diabetic respondents on the basis of frequency of following regular routine for examination (n=51):

Follow up	Diabetic Respondents		Total (%)	P VALUE
	Rural (%)	Urban (%)		
Quarterly	6(28%)	25(83%)	31(61%)	<0.05
Half yearly	13(62%)	1(3%)	14(27%)	
Yearly	1(5%)	2(7%)	3(6%)	
When any problem	1(5%)	2(7%)	3(6%)	
Total	21(100%)	30(100%)	51(100%)	

Discussion:-

The present study was conducted to assess the Knowledge of Diabetic Complications and Practice of Routine Medical Check-up among Diabetics (>10 years) in the field practice area of Government Medical college, Amritsar showed that In urban area, there were 60% (60/100) males and 40% (40/100) females while in rural area there were 45% (45/100) males and 55% (55/100) females who participated in the study. In rural areas, majority were Sikh (81%; 81/100) and in urban area, majority were Hindu i.e. (71% i.e. 71/100), literate (R-77%; 77/100 and U-94%; 94/100) and unemployed (R-55%; 55/100 and 42%; 42/100). Mean age of diabetic respondents were 61.08 years in both rural and urban areas. A cross sectional study conducted by Kalayou et al (2012) to evaluate adherence to Diabetes Self-Management Practices among Type II Diabetic Patients stated that out of total 320 subjects, 52.2% and 47.8% were female and male respectively. A significant number of the respondents i.e. 57% did formal education and 66% were unemployed (4).

Another community based cross-sectional study conducted by Kishore et al (2012) in rural and urban slum areas of Delhi to assess the awareness, practices and treatment Seeking Behavior of Type 2 Diabetes Mellitus Patient revealed that Out of total 98 respondents, 31.6% were from the urban area and 68.4% were from the rural area. In urban area, there were 38.7% males and 61.3% females while in rural area there were 41.8% males and 58.2% females who participated in the study. In both urban and rural areas, majority were Hindu (74.2% and 97%), married (83.9% and 92.5%), literate (77.4% and 80.6%) and unemployed (71% and 61.2%) and mean age (standard division) in the urban area was 49.5 years and in a rural area was 51.18 years(5).

Similarly a cross sectional study conducted by Mookambika et al (2016) to evaluate the self care among diabetic patients in a tertiary care health centre stated that Out of total 120 patients, 61% were males and 39% were females and 14.2% ,31.7% were illiterate and unemployed respectively(6).

The study showed that less than half (44.5%) of diabetic respondents had knowledge about complications and there is a difference in knowledge among patients in rural and urban area as well. A study conducted by Alzahrani et in 2018 al in to explore knowledge, attitude and practice (KAP) regarding diabetes mellitus (DM) among nondiabetic (nonDM) population and diabetes mellitus (DM) patients in Riyadh, Saudi Arabia showed that only 32% diabetic respondents had knowledge about complications(7) .

The present study showed the most common diabetic complication known by diabetic patients was Stroke (28%), neuropathy (47 %), heart disease (73 %), nephropathy (89%), retinopathy (92 %) respectively. The study conducted by Obirikorang et al (2016) to determine the knowledge of diabetic complications among diabetes mellitus clients visiting the Diabetic Clinical at Sampa Government Hospital, Ghana showed that majority (60.0 %) of T2D patients did not have knowledge on diabetes complications and the most common diabetic complication known by diabetic patients was neuropathy (29.2 %), retinopathy (17.7 %), heart disease (9.2 %), and nephropathy (5.4 %) respectively(8). Another study conducted by Adeyemi et al in 2018 to assess the Knowledge of Diabetic Complications and Practice of Routine Medical Check-up among Type 2 Diabetics in Nigeria showed that 90.5% of the participants were aware of possible DM complications. 84.8%, 79.0%, and 61.9% of participants also demonstrated good understanding of retinopathy, neuropathy and cardiac complications while participants' knowledge of cerebral damage and nephropathy were inadequate in 61.9% and 60% respectively(9). Our study showed higher results because of lack of communication between patient and Physician.

The present study showed only 25% diabetic respondents had followed regular routine for examination of which only 6% were doing follow up every yearly to prevent the diabetic complications .A study conducted by Adeyemi et al also revealed that only 36.2% diabetic respondents had followed regular routine for examination of which only 7% were doing follow up every yearly to prevent the diabetic complications(9). It was also observed that longer duration of DM did not correlate significantly with practice of routine check-up. Overall, general practice of routine medical check-up was poor among the participants and may be associated with inadequate knowledge of specific diabetic complications.

Conclusion:-

Patients have inadequate knowledge about diabetes complications. Patients need to be made aware of long-term complications of diabetes on eye, heart, kidney, etc., and precautions that should be taken that they can be prevented. At the same time, efforts should be made to sensitize them about the importance of routine medical check -up. There is a need to emphasize patients' education and physicians should encourage patients on the need for systematic medical evaluation to classify patients and identify those with complications for early treatment. Moreover, Public health care facilities should be utilized for easy and affordable availability of drugs so that burden of disease on patient family can be reduced.

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