LIFE STYLE MODIFICATION AMONG DIABETIC PATIENTS

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Abstract:

Lifestyle modifications have key role in the management of diabetes. Awareness about the changes in lifestyle can play a vital role in the management of diabetes. There is a need of health education programs for diabetics and general population. As the diabetes is a slow progressive disease which causes target organ damage if not control. Study shows that controlled diabetics has also risk of target organ damage. Managing a diabetic patient needs to be combination of diet, discipline and drugs. Only drugs is given by the physician but the other two control parameter like diet and discipline is done by the patient himself. Life style modification can bring this two factor under control. Here we have studied 100 diabetic patient with following results.

Key words: *Diabetes,Life style, awareness,compliance.*

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Introduction:

Diabetes mellitus is a chronic and debilitating disease, is associated with a range of short-term and long-term complications[1]. The management of diabetes mellitus and the management and prevention of the complications are important challenges of the present time. Studies indicate that genetic factors do not account entirely for the development of diabetes, and several environmental triggers have been implicated [2]. The most important environmental risk factors for diabetes are obesity and physical inactivity. The massive explosion in obesity rates worldwide has largely been responsible for the increase in diabetes, and it is estimated that up to 80% of all new cases of diabetes can be attributed to obesity[3]. Change in life style has increased the incidence of obesity[4]. Despite several advances in the field of diabetology, it is unfortunate that there exists a low awareness of the disease among public[5]. For an effective control and prevention of diabetes; 87% of Bangladeshis, 88% of Pakistanis and 71% of Indians did not meet the guidelines as compared to 52% Europeans[6].

In Bangladesh prevalence of Diabetes Mellitus is 6.1%. At present Bangladesh is in 10th position but very shortly will be in 8th position according to the total cases of diabetes in adult population (20 to 79 years) in 2030.[7] The rapid rise of diabetes mellitus is one of the major health challenges. In fact, up to 80% of type-2 diabetes is preventable by adopting a healthy diet, increasing physical activity and promoting a healthy lifestyle [8,9].The important issues of lifestyle of a diabetic include their dietary habit, physical activity and exercise, regular monitoring blood glucose, physical care such as foot care, regular follow up etc.[7]

Therefore to manage diabetes, the individuals must have ample knowledge of their disease, medication, diet as well as risk factors. Thus health education is integral part in the management of diabetes. The present study was designed to assess the awareness about the role of lifestyle changes among the diabetic patients. There is a need of health education programs for diabetics and general public. This study will help to take more effective initiative to educate and empower diabetic patient about their disease and its fatal outcome if not manage early and consistently.

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Aim and objectives

To observe the effect of lifestyle changes in the management of diabetes, among diabetic patients.

Study design: Cross sectional study.

Study place: Department of medicine ZH Sikder Women's Medical College & Hospital

Number of case study: 100 (one hundred).

Study procedure: Patients who were clinically and laboratory findings suggestive of diabetes mellitus. Ages > 18 and both sexes were included in the study and patients who were age <18 and unconscious or drowsy they were excluded in this study. All collected questionnaire were checked very carefully to identify the error in the data. Data processing work was consisting of registration schedules, editing computerization, preparation of dummy table, analyzing and matching of data. Information was collected who give consent and participated in the study willingly. After collection, data editing and clearing will be done manually and prepared for data entry and analysis by using computer software SPSS-19.

Results:

Table shows age group distribution of the study population, majority of them, 33% were 41-50 year age group, followed by 26% were 51-60 years age group, 24% were > 60 years of age group. 13% were 31-40 years age , 04% were up to 20 years age group. Mean (±SD) age was 51.74(±13.02). Sex distribution of the study population shows male were 51% and 49% were female. Table shows occupational status, majority of them 40% were housewife, 25% were retired service holder, 23% were service holder, 08% were business men. Table shows educational status of the study population, out of 100 respondent 38% were secondary, 27% were primary, 19% were illiterate and 16% were in higher secondary and above. Figure shows 30% respondent were smoker and 70% were non smoker. Figure shows knowledge regarding signs & symptoms of diabetes mellitus; majority of the respondent, 58% had poor knowledge, 23% had good knowledge and 19% had no idea. Regarding complications majority of the respondent, 57% had poor knowledge, 14% had good knowledge and 29% had no idea. Table shows most of the respondents, 91% were taking treatment regularly, rest of them 09% were irregular. Table shows majority of the respondent, 96% had idea of diet chart, rest of them 04% had no idea. Table shows 75% of the respondents were following diet chart and 25% were not following diet chart. Figure shows 50% of the respondent doing exercise occasionally, 34% was 2-4 time per week, and 16% were daily. Table shows majority of respondent 86% were avoid smoking and 14% were not avoid smoking. Table show majority of the respondent, 62% had no idea about the target Blood pressure, followed by 29% had reached their target of blood pressure, 09% had not reached. Table shows investigation findings of the study population, Mean Hb A1c (%) were 9.84 (±1.64), Serum Creatinine were 1.52(±1.19), total cholesterol 215.12(±42.68) (mg/dL), LDL (mg/dL) 129.27 (±33.35), Triglyceride (mg/dL) 256.41(±73.65) and mean HDL(mg/dL) 34.89(±4.90)

Table-I

Age group distribution of the study population

Age group	Frequency	Percent
up to 20 years	04	04.0
31-40 years	13	13.0
41-50 year	33	33.0
51-60 years	26	26.0
>60 years	24	24.0
Total	100	100.0
Mean (±SD)	51.74(±13.02)	Range 18.0-80.0

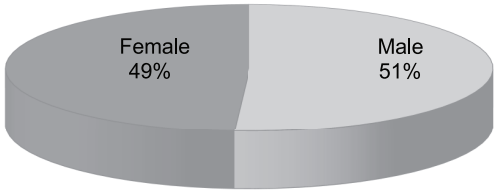

Fig.-1: *Sex distribution of the study population*

Table-II

Occupational status of the study population

Occupation	Occupation	Frequency Percent
Service	23	23.0
Business	08	08.0
House wife	40	40.0
Retired	25	25.0
Others	04	04.0
Total	100	100.0

Table shows occupational status, majority of them 40% were house wife, 25% were retired service holder, 23% were service holder, 08% were business men.

Figure shows 30% respondent were smoker and 70% were non smoker.

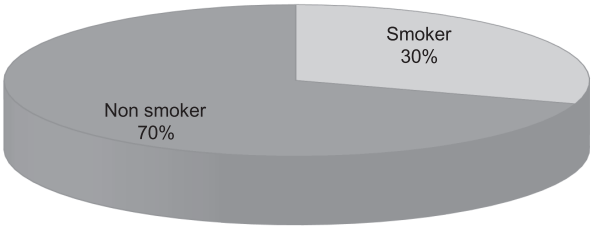

Fig.-2: *Smoking habit of the study population*

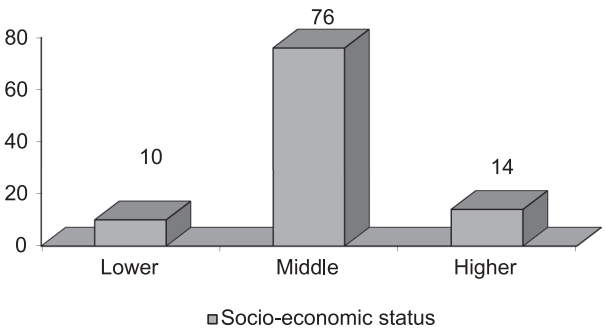

Fig.-3: *Socio-economic status of the study population*

Table-III

Educational status of study population

Educational Status	Number	Percentage
Illiterate	19	19
Primary	27	27
Secondary	38	38
Higher secondary and above	16	16

Table shows educational status of the study population, out of 100 respondent 38% were secondary,27% were primary, 19% were illiterate and 16% were in higher secondary and above.

Figure shows knowledge regarding signs & symptoms of diabetes mellitus; majority of the respondent, 58% had poor knowledge, 23% had good knowledge and 19% had no idea. Regarding complications majority of the respondent, 57% had poor knowledge, 14% had good knowledge and 29% had no idea.

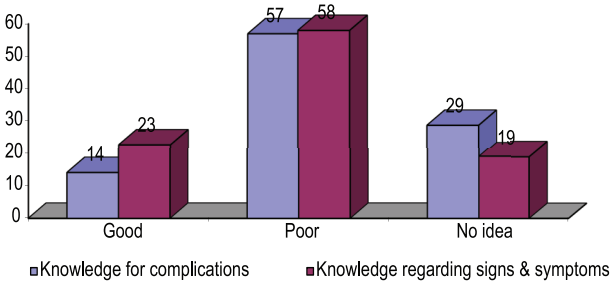

Fig.-4: *Knowledge regarding signs, symptoms and complications of diabetes*

Table-IV

Treatment status of the respondent

Taking treatment	Frequency	Percent
Regular	91	91.0
Irregular	09	09.0
Total	100	100.0

Table shows most of the respondents, 91% were taking treatment regularly, rest of them 09% were irregular.

Table-V

Idea of diet chart

	Frequency	Percent
Idea of diet chart	96	96.0
No Idea of diet chart	04	04.0
Total	100	100.0

Table shows majority of the respondent, 96% had idea of diet chart, rest of them 04% had no idea.

Table-VI

Follow diet chart of the study population

Follow diet chart	Frequency	Percent
Follow diet chart	75	75.0
Not follow diet chart	25	25.0
Total	100	100.0

Table shows 75% of the respondents were following diet chart and 25% were not following diet chart.

Figure shows 50% of the respondent doing exercise occasionally, 34% were 2-4 time per week , and 16% were daily.

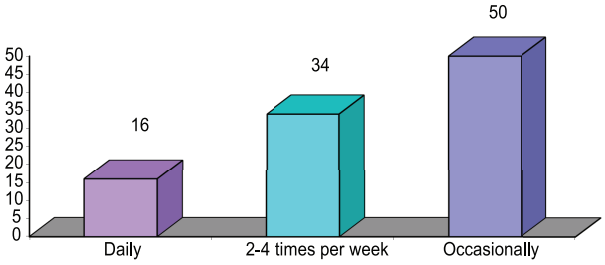

Fig.-5 : *Exercise status of the respondent*

Table-VII

Respondent avoid smoking

Avoid smoking	Frequency	Percent
Avoid smoking	86	86.0
Not avoid smoking	14	14.0
Total	100	100.0

Table shows majority of respondent 86% were avoid smoking and 14% were not avoid smoking.

Table-VIII

Reaching target blood pressure

	Frequency	Percent
Reaching target of BP	29	29.0
Not reaching target of BP	09	09.0
No idea about target of BP	62	62.0
Total	100	100.0

Table show majority of the respondent, 62% had no idea about the target Blood pressure, followed by 29% had reached their target of blood pressure, 09% had not reached.

Figure shows out of 100 cases 54% were normal weight, 33% were over weight and 13% were obese.

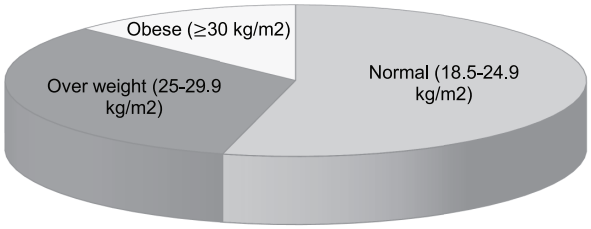

Fig.-6 : *BMI of the study population*

Table-IX

Respondent taking care of foot

Care of foot	Frequency	Percent
Taking care of foot	70	70.0
Not taking care of foot	30	30.0
Total	100	100.0

Table shows 70% respondent were taking care of foot and 30% were not taking care of foot.

Table-X

Investigation findings

Investigation	Mean(±SD)	Range Minimum-maximum
HbA1C	9.84 (±1.64)	6.50-13.20
Serum Creatinine	1.52(±1.19)	0.69-7.0
Total cholesterol	215.12(±42.68)	121.0-312
LDL	129.27 (±33.35)	49.0-214
HDL	34.89(±4.90)	19-49
TG	256.41(±73.65)	115.0-378.0

Table shows investigation findings of the study population, Mean Hb A1c (%) were 9.84 (±1.64), Serum Creatinine were 1.52(±1.19), total cholesterol 215.12(±42.68) (mg/dL), LDL(mg/dL) 129.27 (±33.35), Triglyceride(mg/dL) 256.41(±73.65) and mean HDL(mg/dL) 34.89(±4.90)

Discussion

American Diabetic Association has defined self- management education as the process of providing the person with diabetes the knowledge and skill that is needed to perform self -care, manage crises and make life style changes. To achieve such standerd self- care patients and doctor should work together.[10] There is emphasis on teaching pathophysiology and its relation with treatment, nutritional aspects, medications, complications, goal setting and psychosocial adjustments. Considering these standards, we formulated our questionnaire.

In this study majority of the respondent, 33% were 41-50 year age group; followed by 26% were 51-60 years age group, 24% were > 60 years of age group. 13% were 31-40 years age , 04% were up to 20 years age group. Mean (±SD) age were 51.74(±13.02).

Carolino et al.[11] study reported, there was only one patient older than 80 years, while the age range with the highest concentration of individuals was from 60 to 69 years old (51.51%), followed by 50 to 59 years (30.30%) and 70 to 79 years (16.67%). These findings are coherent with those found in other studies carried out with samples originating from health services.[15] Such evidence can be justified by the fact that a higher frequency of DM2 occurs at approximately 60 years of age. That is similar to in this study.

The another study Rahman et al.[12] Reported the mean age of the respondents was 54.96 years and 60% of them were in the 45 to 64 years age group and age distribution was comparable with that of type 2 diabetes in developing countries.[13]

In this series majority of the respondent, 40% were house wife, 25% were retired service holder, 23% were service holder, 08% were business men.

Rahman et al.[12] study, found Service holder 21.5%, Housewife 41.2 % ,Retired 23.2% and Businessman 14.1% that is similar to our study.

This study shown majority of respondent, 76% came from middle class socio-economic background while 14% from higher and 10% came from lower class. Regarding the educational status of the study population, out of 100 respondent 38% was secondary, 27% were primary, 19% were illiterate and 16% were in higher secondary and above. Majority of the respondent, 58% had poor knowledge of signs and symptoms of DM while 23% had good knowledge and 19% had no idea. Regarding complications of diabetes mellitus; majority of the respondent, 57% had poor knowledge, 14% had good knowledge while 29% had no idea. Both affordability and literacy may be the problem in diabetes education and management. Education of vulnerable communities can become a cost-effective public health strategy. It has been shown that self-care among individuals with type 2 diabetes improved glycemic control [14] and reduced complications.[15]

Maina et al.[16] study reported , 358 (18%) of the respondents had tertiary education, 737 (37.2%) had secondary education, 725 (36.6%) had primary education while 162 (8.2%) had no education at all. 575 (29%) of respondents had good knowledge of signs and symptoms of diabetes while 1407(71%) of respondents had poor knowledge on what diabetes is. 518 (26.1%) could correctly identify the probable causes of diabetes mellitus while 1464(73.9%) could not. Only 523(26.4%) of the respondents could identify complications of diabetes they knew while 1459(73.4%) had very little or no knowledge of complications of diabetes.

The findings of this study reveal a serious deficiency in knowledge of diabetes among community members in Kenya. Only 27.2% of the people interviewed had good knowledge of diabetes. Puepet et al.[17] found a similar level of knowledge of diabetes, 30.2%, among patients with diabetes in Jos State, Nigeria [17]. Dinesh et al.[18] in a study in western Nepal, noted a lack of awareness of diabetes even in patients who had had the disease for a long time [18]. Even in a developed country set up, Baradaran and Jones also found that knowledge about diabetes amongst ethnic groups in Glasgow was very low [19].

In this study 91% respondents were taking treatment regularly, rest of them 09% were

irregular. 96% had idea of diet chart, rest of them, 04% had no idea. 75% of the respondents were following diet chart while 25% were not following diet chart. Compared with study of Ulvi et al.[20] reported 14.7% respondent followed regular diet regimen, 85.3% were not followed regular diet regimen. 22.7% had regular checkup and 77.33% had no regular checkup.

In this series 30% respondent were smoker and 70% were non-smoker. Only 35% of the respondents were doing exercise regularly while 40% were occasional and 25% were doing no exercise. On the basis BMI 54% were normal weight while 33% were over-weight and 13% were obese. Only 29% of respondents had reached their target of blood pressure while majority of them,62% had no idea of target blood pressure and 09% had not reached. It indicates poor level of awareness regarding the importance of exercise and weight control among diabetic patient getting treatment at tertiary center.

Awareness about Diabetes Mellitus was found to be similarly low in a community based study in Malaysia.[21] This study and similar other studies have shown undisputable evidence that regarding poor awareness level of diabetes. There were no studies found which could contradict the results of this study nor show more positive results when it comes to public awareness. The prevalence of diabetes has increased drastically in Oman over the last decade, while knowledge of diabetes was suboptimal.[21] Attendees of a primary care center in eastern Saudi Arabia were found to have poor knowledge on DM risk factors and preventative measures.[22] Education and age were found to be the most important predictors of knowledge.[22]

In another study Malathy et al.[23] observed that 54 (39.42%) of the test population were overweight and 31 (22.6%) of them were obese, which indicates the poor level of awareness regarding the benefits of physical activity and exercises in reducing the BMI. Among the males 17 (12.4%) were smokers. In the test group, 21 (15.3%) patients had systolic BP e" 140 mm Hg and 36 (26.3%) had diastolic BP e" 90 mm Hg. That nearly support this study.

In this series 70% respondent were taking care of foot while 30% were not taking care of foot. This implies poor awareness of complications regarding diabetic foot. Compared with Malathy et al.[23] study reported 46 (33%) of patients knew about the importance of foot care.

Investigation findings of the study population, Mean HbA1c (%) were 9.84 (±1.64), Serum Creatinine were 1.52(±1.19), total cholesterol 215.12(±42.68) (mg/dL), LDL(mg/dL) 129.27 (±33.35), Triglyceride(mg/dL) 256.41(±73.65) and mean HDL(mg/dL) 34.89(±4.90). These implies poor glycemic control with high TG and low HDL of the majority of the patient.

Carolino et al.[11] study reported, Total cholesterol (mg/dl) 213.78 ± 37.16, LDL-cholesterol (mg/dl) 133.66 ± 31.44, HDL-cholesterol (mg/dl) 43.48 ± 14.54, Triglycerides (mg/dl) 174.20 ± 87.41, Fasting glycaemia (mg/dl) 117.87 ± 33.20 this result is nearly similar to our study.

Conclusion

Knowledge about diabetes mellitus is a prerequisite for individuals and communities to take action to control the disease. However, research to assess knowledge deficiencies and their relation to health-seeking behavior is lacking in most developing countries. Diabetes education, with consequent improvements in knowledge, attitudes and skills, will lead to better control of the disease, and is widely accepted to be an integral part of comprehensive diabetes care.

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