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Knowledge and Associated Factors among Diabetes Patients in Sambalpur District, Odisha

Sandhya Ranee Bhoi,
Research Scholar, P.G. Department-Home Science Sambalpur University,

****Prof.(Mrs) Harapriya Samantaraya,***
Professor and Head, P.G. Department-Home Science, Sambalpur University.

Abstract:

Knowledge on Diabetes and its associated factors leads to better control of the disease, minimize diabetes complications and improve quality of life. The paper based on explanatory design intends to assess the level of knowledge about disease and its associated factors among diabetes patients in Sambalpur district, Odisha. Data on demographic profile, diabetes complications, knowledge, attitude and practice have been collected with the help of a pre-tested questionnaire. Data thus collected were arranged in Microsoft excel and put to statistical test like Athematic Mean, Standard Deviation and Correlation Coefficient using software SPSS_10.0 for interpretation. It is hypothesized that adequate knowledge about the disease and its associated factors among the patients leads to a better living.

The survey indicated that among patients having inadequate knowledge were unaware of the cause of diabetes, its symptoms, accurate method of monitoring. well-balanced diet, proper foot care, control of diabetes, technique of managing hypoglycemic symptoms and required lifestyle modification. Most of the diabetic patients had moderate level of knowledge regarding the diabetes management. A significant relationship existed between Diabetes Knowledge Questionnaire (DKQ) score and age, level of education, occupation and patients with family history of diabetes. It has been ascertained that inadequate of knowledge leads to a poor quality of life, compared to those patients with adequate knowledge about disease and its associated factors. It is suggested to use popularly used social media as well as electronic media for raising awareness to help patients lead better living.

Key words: Diabetes Mellitus (DM), Diabetes Knowledge, Associated Factors

Introduction

According to Park (1950) changing demographic profile and technological progress have led to many health problems coupled with sedentary life styles and inappropriate diets that contribute to chronic degenerative diseases like cardio vascular disease, diabetes mellitus, liver disease, kidney damage, hypertension and other psychosomatic disorders. With economic prosperity, the city dwellers urge to lead a quality life. Among others, the diabetic patients have some amount of awareness acquired from social transactions with family and friends. The conscious diabetic patients opt for therapeutic diet to maintain health. However, the scenario in India today is far from satisfactory. The common man has literally no understanding of the gravity of the disease and its manifestations. Those trust the innumerable baseless theories on the disease adopt inappropriate Medicare and unhealthy life style which is undesirable.

There is very little data on the level of awareness about diabetes in developing countries like India. Such data is extremely important to plan the public health policies with specific reference to implementation of national diabetes control programs. A literature search on knowledge about diabetes in developing countries yielded limited studies actually dealing with the awareness of diabetes among people with the disease and virtually no data on a whole population. Even in other developing countries, such studies have mainly focused on diabetic patients and are mostly clinic based that introduces referral bias. Knowledge about the level of awareness on diabetes in a population is the first step in formulating a prevention program for diabetes. This study is a step in this direction where the awareness and knowledge, Attitude/Practice and Quality of life of diabetes in Sambalpur District in Odisha was assessed. This study was designed to investigate patients' awareness about diabetes, misconceptions, its treatment especially through diet and insulin. The information gained could subsequently be helpful to design and initiate comprehensive program for detection and control of diabetes and its complications with better Quality of life, self-care and community support as its major components. Objectives of the study was to know the level of knowledge on Diabetes and its associated factors among the patients of Sambalpur city

Research Design

The present work based on explanatory research design intends to document the level of knowledge on diabetics and its associated factors among patients of Sambalpur District, has been taken for the present work hypothesizing that patients with adequate knowledge about disease and its associated factors lead better quality living. It is suggested to raise awareness popularly used social media as well as electronic media may be used to help patients lead better living

Sampling Design

For the present study stratified purposive random sampling method was followed. The study comprised of indoor door and outdoor medical survey carried out in the selected (Four) hospitals and Nursing Homes of Sambalpur Town of which two run by private parties and two government health care units namely; District Headquarters Hospital of Sambalpur, VSS Medical College Hospital, Burla, Vikash Hospitals (Private) ,Sanjivani Hospital (Private)The diabetes patients, who visited these hospitals were selected as the samples.

Criteria for Exclusion and inclusion of the sample

Men and women with Type-1 and Type-2 diabetes mellitus patients receiving drug therapy for disease were considered as eligible for inclusion in the study. Children, pregnant women, and mentally incompetent patients were excluded from the study. Taking this into consideration,350 diabetes patients were selected and data collected through a pre-tested scheduled-cum-questionnaire. To substantiate data from the medical sources(history) were also collected.

Pilot study was done in Sanjivani Private Hospital with 25 diabetic patients. Questions relating to age, sex, religion, occupation, education, and other such information were collected from the respondents. Information related to family like family size, type of family, monthly income of family and other such data collected from the respondents were crosschecked from their family members. Information related to disease management, Quality of life and knowledge, attitude and practice etc were also collected from the diabetic patients through person-to-person interaction.

The Knowledge, Attitude, and Practice (KAP) Questionnaire, developed by Palaian.et.al was used. It consisted of 25 questions: seven attitude/practice related questions (numbers 8, 11, 13, 16, 17, 23, and 24) and 18 knowledge-related questions. Each question was scored as one (1) for a correct answer and zero (0) for an incorrect.

The large volume of raw data was reduced into homogenous groups to get meaningful inter parameter relationships. In the present case, the independent variables like problem and other Knowledge, Attitude/Practices, and Quality of life have been selected on the basis of the objective of the study. Collected data were classified. Tabulation was done for summarizing the raw data and was displayed in compact form for further analysis. This facilitates the process of comparison. The statistical package for social sciences (SPSS), Window verson10.0, was used for the data analysis.

Statistical analysis is very significant in the field of research. Keeping in view of the objectives and design of the present study, different statistical techniques were employed to analyze the data. The techniques used for the analyzing the data are given below

- Arithmetic Mean, Standard deviation and Correlation Coefficient

Assessment of Knowledge, Attitude and Practice of Diabetic Patients

Demographic transition combined with urbanization and industrialization has resulted in drastic changes in lifestyles globally but the impact is felt more in developing countries because of their more rapid pace of growth. One of the consequences of this transition is a change in disease patterns with communicable diseases being replaced by non-communicable or life style related diseases like diabetes, obesity, cardiovascular disease and cancer. Until a decade ago, diabetes was not considered a major public health problem in developing countries like India but the situation has now dramatically changed. According to the recent World Health Organization report (WHO), India today leads the world with over 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030. Recent surveys indicate that diabetes now affects a staggering 10 - 16% of the urban population in India. In the process Sambalpur cannot be exception to it.

There is very little data on the level of awareness about diabetes in developing countries like India. Such data is extremely important to plan the public health policies with specific reference to implementation of national diabetes control programs. A literature search on knowledge about diabetes in developing countries yielded very few studies actually dealing with the awareness of diabetes among people with the disease and virtually no data on a whole population. Even in a few other developing countries, such studies have mainly focused on diabetic patients and are mostly clinic based which introduces referral bias. Knowledge about the level of awareness on diabetes in a population is the first step in formulating a prevention program. This study is a step in this direction where the awareness and knowledge, Attitude/Practice of diabetes in Sambalpur city, Odisha was assessed in a population-based study.

Knowledge of Diabetes Patients

There were 18 questions in this section of the questionnaire, and the total scores ranged from 0 to 18 points. The classifications of the scores divided the respondents into 3 levels knowledge. I.e. inadequate, moderate and high level of knowledge/ Adequate:

Table No- 1 Level of Knowledge on the Diseases of the Respondents

Knowledge	N	Percentage (%)
Inadequate Knowledge (0-7)	97	23.33
Moderate Knowledge (8-12)	167	50.83
High Knowledge /Adequate (18 & Above)	86	25.83
Min= 0	Max=17 Mean= 9.96	SD=3.91

Knowledge: The questionnaire concerning knowledge of the disease included 18 Questionnaire. The total scores concerning the knowledge in this study score of 18 points. The average knowledge level was 9.96, SD was 3.91, Minimum was 0 and Maximum was 17. The majority i.e.,50.83% of the study population had a moderate level of knowledge of Diabetes mellitus. 25.83% of the respondents had high knowledge/ Adequate about the Diabetes Mellitus at, and23.33% had low knowledge about the Diabetes Mellitus (Table No-1).

Table No-2- Level of Knowledge in Relation to Age, sex, Native place, Education and income

S.N		Inadequate Knowledge				Moderate Knowledge				High Knowledge					
.1	**Age**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**T.M**	**T.SD**
	25-40(Younger Age)	19	17.92	5.15	2.16	54	50.94	10.27	1.27	33	31.13	15.21	1.49	10.89	3.78
	40-60(Middle Age)	45	28.48	5.42	1.852	75	47.46	9.94	1.21	38	24.05	15.26	1.45	9.93	3.85
	60& Above(Old Age)	33	38.37	4.78	1.79	38	44.18	10.07	1.23	15	17.44	14.66	1.54	8.84	3.91
	Total	97	27.7	5.15	1.90	167	47.7	10.08	1.24	86	24.6	15.13	1.48	9.96	3.91
.2	**Sex**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**T.M**	**T.SD**
	Male (212)	57	26.88	5.36	1.73	98	46.22	10.15	1.27	57	26.88	15.05	1.50	10.18	3.84
	Female (138)	40	28.98	4.85	2.09	69	50	9.98	1.20	29	21.01	15.31	1.46	9.61	3.99
	Total	97	27.7	5.15	1.90	167	47.7	10.08	1.24	86	24.6	15.13	1.48	9.96	3.91
.3	**Native Place**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**T.M**	**T.SD**
	Rural (125)	39	31.2	5.20	1.83	62	49.6	10.06	1.21	24	19.2	15.62	1.4	9.6	3.91
	Urban (225)	58	26.72	5.12	1.95	108	49.76	10.08	1.27	59	27.18	14.96	1.48	10.08	3.93
	Total	97	27.7	5.15	1.90	167	47.7	10.08	1.24	86	24.6	15.13	1.48	9.96	3.91
.4	**Education**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**T.M**	**T.SD**
	Below metric (65)	42	64.61	4.23	2.12	21	32.81	9.38	1.24	2	3.12	13.00	-	6.16	3.26
	Intermeadiate(125)	28	22.4	5.75	1.50	70	56	10.05	1.15	27	21.6	14.51	1.36	10.05	3.18
	Graduate (117)	17	14.52	4.2	2.12	62	52.99	10.37	1.17	38	32.47	15.421.40	1.40	11.42	3.32
	post graduate & other professional (43)	10	23.25	5.3	1.49	14	32.55	10	1.61	19	44.18	15.68	1.45	11.41	4.47
	Total	97	27.7	5.15	1.90	167	47.7	10.08	1.24	86	24.6	15.13	1.48	9.96	3.91
.5	**Income**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**N**	**%**	**Mean**	**SD**	**T.M**	**T.SD**
	1-1,000(14)	32	82.05	4.50	1.95	7	17.94	10.00	-	-	-	-	-	5.35	2.59
	1,000-2000(20)	18	29.03	5.16	1.79	35	56.45	10.11	1.30	9	14.51	14.44	1.42	9.30	3.38
	2,000-3,000(59)	23	18.85	5.08	2.31	74	60.65	9.95	1.23	25	20.49	14.48	1.47	9.96	3.32
	3,000 & above(27)	24	18.89	6.08	.974	51	40.15	10.35	1.21	52	40.94	15.57	1.36	11.68	3.80
	Total	97	27.7	5.15	1.90	167	47.7	10.08	1.24	86	24.6	15.13	1.48	9.96	3.91

Knowledge in Relation to Age:

The survey indicated that 5.94 percent of the respondents in younger age (25-40) group had moderate level of knowledge with a mean value of 10.27 and SD of 1.27. Around 46.46 % of middle age respondents and 44 % of old age respondents had moderate level of knowledge regarding the management of Diabetes. Only 24 %of respondents under the age 60 and 17 % above (old Age) had high level of knowledge on the control the diseases. From the table no 2 it can be inferred that the younger age group had more knowledge than middle age and old diabetic respondents. With the increase of the age there is a significant decrease of knowledge among the diabetic patients. The younger respondents had better level of Knowledge in comparison to the middle and old age respondents.

Knowledge in Relation to Sex:

From the data tabulated it can be inferred that more female respondents had inadequate level of Knowledge i.e. 28.98% than male respondents i.e.46 %. Around half of the male and female respondents had moderate level of Knowledge i.e. 41.31% and 58.68%. More(26.88%) male respondents had high level of Knowledge than of female respondents(21.01%). The male diabetic patients had good level of knowledge on various aspects like causes of diabetes, symptoms and treatment of diabetes, method of monitoring diabetes, exercise, etc. for the better management of diabetes**.**

Knowledge in Relation to Native Place:

The Table No 2 revealed that among rural and urban area 50% of respondents had moderate level of knowledge for the management of the Disease. The knowledge regarding causes of diabetes, symptoms and treatment of diabetes, method of monitoring diabetes, urine test, exercise were known to the diabetic patients.19.2% of rural respondents had high level of knowledge with a mean value of 15.62 and SD of 1.4 and 27.18% of urban respondents had high level of knowledge with a mean value of 14.96 and SD of 1.48 From the above information it can be concluded that the urban respondents had a high level of Knowledge to manage diabetes in compared to the rural respondents. This might be due to a smaller number of the respondents coming from rural areas.

Knowledge in Relation to Education:

43.29% of the respondents with below metric level of education had inadequate Knowledge regarding the disease management. The level of knowledge was high (44.18%) among the respondents with graduate/post graduate and other professional education level. The mean value was 15.68 and SD of 1.45. From the table it was clear that the higher educational group respondents had high level of knowledge compared to other educational groups. Educated respondents reveal adequate knowledge about their disease management**.**

Knowledge in Relation to Income:

32.98% of the respondents belonging to lower level of income group had inadequate knowledge on the disease management with a mean value of 4.00, SD of 2.58. The Knowledge level was high (33.33%) among higher income group respondents with mean value of 15.44 and SD of 1.58. 61.01% of respondents under middle income group had moderate level of knowledge on the diabetes management. Majority of higher income group respondents had high level of knowledge in comparison to other income groups with regard to the management of diabetes.

Figure No:1- Quality of Life in Relation to Knowledge

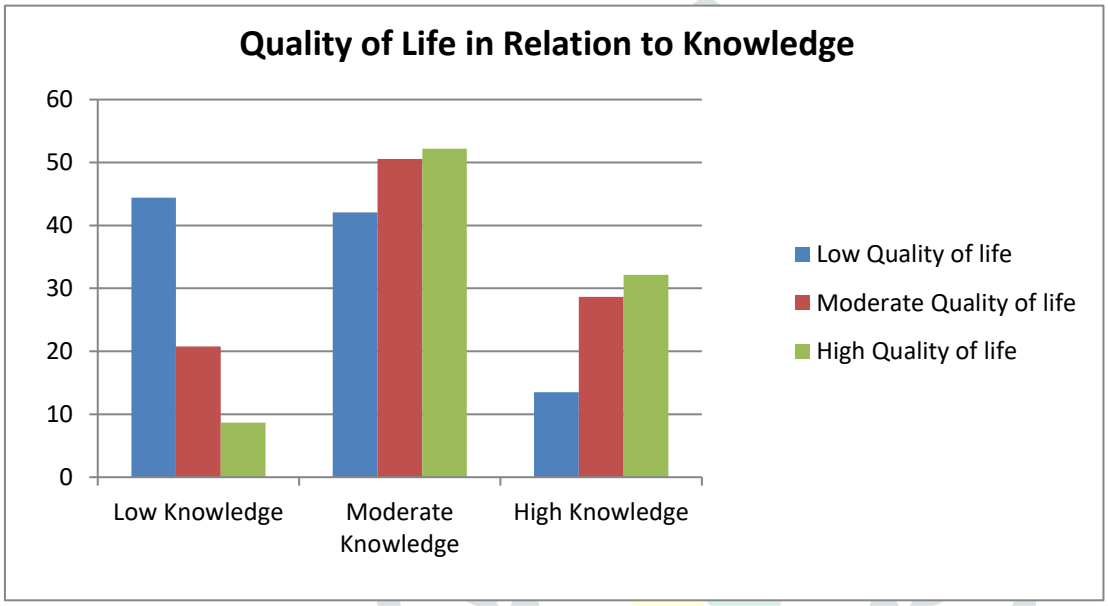

Figure No-1 revealed that the quality of life in relation to knowledge of the respondents the total 56% of the respondents with inadequate knowledge had a poorer quality of life. Only 8.69% had high quality of life among inadequate knowledge group of the respondents. The mean value was value of 98.40, SD 26.75. 32.14% of the respondents with a high knowledge had a good quality of life. The survey indicated that the respondents with low level of knowledge in the study population, were not aware of the cause of diabetes, symptoms of diabetes, accurate method of monitoring diabetes, lifestyle modification required for diabetic patients, management of the diet, proper foot care, control of diabetes, management of the hypoglycemic symptoms etc .Most of the diabetic patients had moderate level of knowledge regarding the diabetes management and they also reported to have moderate level quality of life. From the data it was clear that inadequate level of knowledge lead to a poorer quality of life and an adequate bearer a knowledge bearers' better quality of life.

Correlation Coefficient of Knowledge and Quality of Life

		KNOWLEDGE	Quality of life
Knowledge	Pearson Correlation	1	.334**
	Sig.(2-tailed)	-	.000
	N	350	350
Quality of life	Pearson Correlation	.334**	1
	Sig.(2-tailed)	.000	-
	N	350	350

*** -Correlation is significant at the 0.01 level(2-tailed*

Among the diabetic patients the knowledge on Diabetes Mellitus is significantly associated with Quality Of life. The results showed that, in Western Odisha there exist a moderate knowledge about diabetes Mellitus and patients have taken better preventive health measures. There is a Positive correlation between Knowledge (.334**) and Quality of Life. Correlation is significant at the 0.01 levels (2-tailed) and Quality of Life in diabetes mellitus.

Conclusion

The overall knowledge about Diabetes Mellitus was not associated with the preventive health action. In other words, the people who had moderate knowledge about Diabetes Mellitus stated that it had effect on their health. Moreover, the respondents who had a high knowledge of Diabetes Mellitus reported that they had not taken any preventive health action.

This discrepancy could be the result of a combination of few confusing statements in the questionnaire, and the nature of the subjects. Most subjects were elderly who could have easily become confused with some of the overwhelming questions that this study used to measure many of the factors. Nevertheless, this study agreed with Health Belief Model (HBM), Backer (1975) postulates that although knowledge is an important related factor leading to preventive health action, merely increasing knowledge does not always change behaviors. In this study, most of the subjects were age between 40-60 years old (n=158), and they might have had many experiences from self-learning or exchanging information with others. As a result, the people would develop some values, beliefs or attitudes that could affect either good or poor health behavior. An increased knowledge therefore does not always cause changes in behavior. The respondents having low level of knowledge remained unaware of the cause of diabetes, symptoms of diabetes, accurate method of monitoring diabetes, lifestyle modification required for diabetic patients, management of the diet, proper foot care, control of diabetes, management of the hypoglycemic symptoms etc That may be the same reason, as in this study, that although the subjects had a good level of overall knowledge, they would have other motivations, beliefs or attitudes which had a greater effect on their Quality of Life. adequate knowledge about the disease and its associated

factors among the patients leads to a better living. With the increase of the age there is a significant decrease of knowledge about diabetics among the patients.

Recommendations:

Awareness varies across age, income group, gender and type of diabetes. However higher income group with higher educated patients the monitoring the disease and diet management found to be in rising trend., The local culture has it own role to play in generating awareness. Since cell phone and Television are rampantly used by almost all families, it is suggested to use popularly used social media as well as electronic media for raising awareness to help patients lead better living.

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