IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

ASSESS THE KNOWLEDGE OF DIABETES MELLITUS AMONG ADULT POPULATION AT SELECTED RURAL AREA

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ABSTRACT:

Background of study:

Knowledge of a disease is an important component of health literacy, that can minimize the mortality and morbidity associated with the problem. Lack of knowledge of a disease leads to the emergence of complications associated with clinical conditions. Hence, a prospective cross- sectional study was conducted to evaluate the knowledge of diabetes mellitus (DM) among the rural residents

Objective: To assess the knowledge of adults regarding diabetes mellitus

Method:

Research carried out selected rural areas and 60 adults were requited through purposive sampling technique. Tool was prepared and checked, validated. Used SPSS software for analysis of data. Used different analysis test. To conclude the study finally identified association between dependent and independent variables.

Result:

shows that majority of mothers 28(47%) were average knowledge regarding diabetes mellitus,22(37%) was poor knowledge and 10(16%) were good knowledge regarding diabetes mellitus. educational status of adult's significant association with knowledge regarding diabetes mellitus hence P<0.05 level. Age, religion, occupation, family monthly income, source of information and type of family had no association between knowledge regarding diabetes mellitus.

Conclusion:

In this study identified most of the adults population had poor knowledge regarding diabetes mellitus. To raise awareness of DM among the general public, there is a need for well-organized educational interventional program(s) that target the weak points.

Key words: Knowledge, Adults, Diabetes mellitus, Rural area

Introduction:

Diabetes is a class of metabolic illnesses characterized by hyperglycemia, which causes micro and macrovascular problems in the human body. These problems reduce quality of life and diminish life expectancy. According to the World Health Organization, the global prevalence of diabetes mellitus (DM) has climbed from 4.7 percent to 8.5 percent since 1980, with an estimated 422 million people affected.[1]

Diabetes was shown to be prevalent in Asian countries, particularly India and Pakistan, at 8.5% and 6.7%, respectively. As per the health profile report, the number of diabetic persons in Gujarat stands at 1,61,578 which is 20.5 per cent of the total 7,87,435 population screened. Along with diabetes, hypertension, too, has the highest number of cases reported from Gujarat. Diabetes

management necessitates not just the use of drugs, but also good patient disease knowledge and healthy self-care routines. Diabetes Mellitus (DM) is a major noncommunicable disease (NCD) that poses a significant danger to public health worldwide. Diabetes is typically a chronic condition that reduces patients' quality of life, increases morbidity and mortality, and places a large financial burden on the healthcare system and the government budget.[2]

Understanding a disease is a crucial part of health literacy, which can reduce the mortality and morbidity linked to that condition. A patient's knowledge about diabetes, along with their background information, can be utilized to assess the individual's risk for diabetes, their willingness to pursue appropriate medication and care, and their motivation to manage their condition throughout their lifetime. Research has shown that a lack of disease comprehension leads to difficulties in understanding medical and health information. Consequently, management practices are often only partially adhered to, ultimately resulting in adverse health outcomes. Variations in knowledge levels have been noted based on factors such as educational background, gender, and socioeconomic status. Poor management of diabetes increases the likelihood of both micro- and macrovascular complications, including diabetic foot ulcers, diabetic retinopathy, diabetic nephropathy, and diabetic neuropathy.[3]

The presence of diabetes alongside other health issues and inadequate management of the condition creates a considerable economic strain on individuals, the community, and the healthcare sector. Various studies indicate that both developing and underdeveloped countries have a lack of awareness regarding diabetes. Insufficient levels of education about diabetes and a poor understanding of preventive measures affect individuals' self-care practices and their use of accessible services. Consequently, knowledge acts as a cornerstone for cultivating healthy behaviors. Research indicates that patients with diabetes who are knowledgeable about self-care

tend to achieve better long-term blood sugar management. Understanding glycemic control enables individuals to recognize the risks associated with diabetes and encourages them to pursue appropriate treatment and take

necessary precautions to manage the condition effectively. Enhancing public knowledge about diabetes may result in improved health behaviors within the community and a reduced likelihood of developing diabetes.[4]

For many years, assessing diabetes knowledge has been an important aspect of evaluating diabetic patients as a whole. Adults who are more informed about their disease and its implications are more likely to follow therapy and experience fewer disease-related issues.

MATERIAL AND METHODS:

Study area and period:

Study was conducted in selected rural areas at monia. The study period was one month.

Study design:

Descriptive research design was used for study

Population

Source and study population

Source of population was all the adult population and source of population was selected adults at rural areas.

Sampling technique and sample size:

Purposive sampling technique and 60 adults were selected for study

Inclusive criteria

Adults are willing to participate in the study Adults who are interest to participate in study **Exclusion criteria**

Adults are not able to read and write

Adults not interest to participate in this study

Variables Dependent variable Knowledge of adults

Independent variable

Knowledge regarding diabetes mellitus

Sociodemographic variables

Age, religion, monthly income, educational status, occupational status, source of information, Type of family.

Operational definition

Knowledge: In this study knowledge refers to the adults regarding diabetes mellitus and prevention.

Adults: It refers to the age group between 20 to 40 years of age

Diabetes mellitus: It refers to a disorder in which the body does not produce enough or respond normally to insulin, causing blood sugar (glucose) levels to be abnormally.

Rural area: It is the communities with a population density below 150 inhabitants per square kilometers.

Data quality control

One week before the main collecting the data, the tool was identified on five percentage of the total sample size in a different location to assess their effectiveness. Insights from this pretest led to revisions that aligned the questionnaires more closely with the study goals. Throughts the data collection process, we ensured data consistency by rigorously monitoring the data collectors and their methods and by routinely reviewing the collected data. Any errors or misinterpretations in the questionnaires were promptly addressed by supervisors, who

collaborated with the principal investigators to make necessary adjustments before the next day's collection.

Interpretation of result analysis:

Before the study analysis, the information collected was cleaned, numbered and input in to the analysis software. The data will be analyzed using SPSS version 23, with result presented through detailed descriptions, frequency and percentage including tabulation, charts and cross-tabulations and chi-square test was used to see the association between dependent and independent variables if probability value less than and equality to 0.05 level will be regarded as important analysis.

RESULT:

Table:1 frequency and percentage distribution of demographic variables

N=60

Variables		**Frequency**	**Percentage**
Age groups	20-30	15	25
	31-40	25	42
	41-50	20	33
Religion	Hindu	30	50
	Muslim	20	33
	Christian	10	17

Educational status	No formal education	10	17
	Primary	14	23
	secondary	18	30
	Higher secondary	10	17
	Graduation and above	8	13
Occupation	Agriculture	20	33
	Private	20	33
	Business	18	30
	Government	2	3
Family monthly income	<10,000	5	8
	11,000-15,000	16	27
	15,000-20,000	21	35

	>21,000	18	30
Type of family	Joint	27	45
	Nuclear	24	40
	Extended	9	15
Source of information	Friends	4	7
	Family member	6	10

	Media	15	25
	Health profession	35	58
Total		**60**	**100**

Table 1 shows that frequency and percentage of respondents 25(42%) were 31-40 years,20(33%) were 41-50 years and 15(25%) were 20-30 years age groups. Regarding religion of adults 30(50%) were Hindu,20(33%) were Muslim and 10(17%) were Christians.

Educational status of adults majority of adults 18(30%) were secondary education,14(23%) were primary,10(17%) were no formal education and higher secondary and 8(13%) were graduation and above. Regarding occupational status of adults 20(33%) were agriculture and private job,18(30%) were business and 2(3%) were government job.

Regarding family monthly income of adults, 21(35%) were 15,000 to 20,000,18(30%) were more than 21,000,16(27%) were11,000 to 15,000 and 5(8%) were less than 10,000. Regarding type of family majority of adults 27(45%) were living in joint family,24(40%) were nuclear family and 9(15%) were extended family.

Regarding source of information about diabetes mellitus 35(58%) were health person,15(25%) were media,6(10%) were family member and 4(7%) were friends.

Table 2: knowledge level of respondents

Knowledge level	**Frequency**	**Percentage**

Poor knowledge	22	37
Average knowledge	28	47
Good knowledge	10	16

Table 2: shows that majority of adults population 28(47%) were average knowledge regarding diabetes mellitus,22(37%) were poor knowledge and 10(16%) were good knowledge regarding diabetes mellitus.

Table:3 Association between knowledge of diabetes mellitus and selected demographic variables

Variables		**Knowledge level**				**chi-square**	**DF**	**P-Value**
		Poor knowledge	**Average knowledge**	**Good knowledge**	**Total**			
Age group	20-30	**7**	**9**	**4**	**20**	**0.531**	**2**	**0.341**
	31-40	**10**	**12**	**4**	**26**			
	41-50	**5**	**7**	**2**	**14**			
Religion	Hindu	**9**	**8**	**4**	**21**	**0.421**	**1**	**0.294**
	Muslim	**11**	**12**	**4**	**26**			
	Christian	**2**	**8**	**2**	**12**			
Educational status	**No formal education**	**4**	**2**	**2**	**8**	**1.832**	**4**	**0.002S**
	primary	**5**	**7**	**1**	**13**			

	secondary	**9**	**8**	**2**	**19**			
	Higher secondary	**3**	**9**	**3**	**14**			
	Graduation and above	**1**	**2**	**1**	**4**			
Occupation	**Agriculture**	**15**	**14**	**6**	**35**	**1.364**	**1**	**0.862**
	Private	**4**	**6**	**2**	**12**			

	Business	**2**	**6**	**2**	**10**			
	Government	**1**	**2**	**0**	**3**			
Family monthly income	**<10,000**	**4**	**5**	**2**	**11**	**0.471**	**1**	**0.573**
	11,000-15,000	**12**	**14**	**3**	**29**			
	15,000-20,000	**4**	**6**	**3**	**13**			
	>21,000	**2**	**3**	**2**	**7**			
Type of family	**Joint**	**9**	**8**	**4**	**21**	**0.731**	**2**	**0.935**
	Nuclear	**8**	**15**	**2**	**25**			
	Extended	**5**	**5**	**4**	**14**			
Source of information	Friends	**2**	**2**	**1**	**5**	**0.392**	**1**	**0.584**
	Family member	**1**	**3**	**2**	**6**			
	Media	**1**	**4**	**1**	**6**			
	Health profession	**18**	**19**	**6**	**43**			

NS-No significant S-Significant, p<0.05

Table 3: shows that educational status of adult's significant association with knowledge regarding diabetes mellitus hence P<0.05 level. Age, religion, occupation, , family monthly income and type of family, source of information had no association between diabetes mellitus.

Discussion:

To assess the knowledge of adults majority of adults population 28(47%) were average knowledge regarding

diabetes mellitus,22(37%) were poor knowledge and 10(16%) were good knowledge regarding diabetes mellitus.

Similar study was conducted study was undertaken to explore knowledge, attitude and practice (KAP) regarding - diabetes mellitus (DM) among nondiabetic (nonDM) and type 2 diabetes mellitus (T2DM) patients in Bangladesh. Result showed that the mean (±SD) age (years) of all the study participants was 46 ± 14, mean BMI 24.4 ± 4.1 and mean waist-hip ratio (WHR) was
0.93 ± 0.07. The proportion of poor, average and good knowledge scores among T2DM subjects were 17%, 68% and 15% respectively. The corresponding values for attitude score were 23%, 67% and 10% respectively. The KAP regarding diabetes was found to be better among people who were living with diabetes compared to their counterparts. DM males showed better knowledge and practice regarding diabetes, compared to nonDM counterparts (M ± SD; 44.18 ± 16.13 vs 40.88 ± 15.62, p = <0.001; 66.00 ± 29.68 vs 64.21 ± 31.79, $p < 0.001$, respectively). Females
showed better attitude score compared to males. Overall KAP were found to be significantly higher ($p < 0.001$) in middle aged (31–50 years) participants in each group. Participants from urban residents, higher educational background and upper socio-economic class demonstrated significantly greater score in terms of KAP in both nonDM and T2DM groups ($p < 0.001$). On linear regression analysis, knowledge scores correlated strongly with education, income, residence, diabetic state, BMI and attitude.Study concluded that the overall level of knowledge and practice concerning diabetes among Bangladeshi population is average, but the overall level of attitude is good both in nonDM and T2DM subjects. To prevent diabetes and its complications there is an urgent need for coordinated educational campaigns with a prioritized focus on poorer, rural and less educated groups.[5]

Similar study was conducted to assess the knowledge and associated factors towards diabetes mellitus among non-diabetes community members of Gondar city. Result showed that A total of 633 study subjects participated in this study with a mean age of 36.12 (± 12.87) years. Of these study participants, 572 had awareness about diabetes mellitus and 51.4% (95% CI: 47.4%, 55.8%) had good knowledge. Being male [Adjusted odds ratio = 1.62 (95% CI: 1.05, 2.48)], monthly income of 3000–5000 birr [Adjusted odds ratio = 1.88 (95% CI: 1.03, 3.41)], monthly

income of

≥5001 birr [Adjusted odds ratio = 2.37 (95% CI: 1.17, 4.78)], previous training on diabetes mellitus [Adjusted odds ratio = 4.37 (95% CI; 3.04, 7.37)], being grade 9–12 [Adjusted odds ratio = 3.1 (95% CI: 1.09, 8.66)], having college and above educational qualification [Adjusted odds ratio =

3.70 (95% CI: 1.26, 10.85)] were significantly associated with good knowledge towards diabetes mellitus.The level of knowledge regarding diabetes mellitus was low among study participants which indicates a need for health education intervention. Previous training on diabetes mellitus, educational status and average monthly income and being male were the factors associated with good knowledge of participants about diabetes mellitus.[6]

CONCLUSION:

The study demonstrates the average level of diabetes and the need of diabetes care. At the same time, it discovered intermediate levels of diabetes knowledge. There is a need to implement large- scale awareness campaigns after determining the best way to reach the general public. There is also a need to create creative tools and teaching models to promote patient compliance and practice. Education and counselling on all areas of diabetes are required.

COMPETING INTEREST:

Authors declared no conflict of interest

ACKNOWLEDGEMENT:

We would thank all study participants and study area, data collection for their contributors to the success of work and I would like to thank Parul university providing opportunity.

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