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A Descriptive Study To Assess The Knowledge Regarding Risk Factors And Prevention Of Diabetes Mellitus Among Adults In A Selected Rural Area Of Rajkot District.

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Abstract
Background: *Diabetes imposes significant health and economic challenges globally, especially in low- and middle-income countries such as India. Diabetes Mellitus is a chronic metabolic disorder characterized by a cardinal biochemical feature, caused by deficiency of Insulin, its action or both manifested by abnormal metabolism of carbohydrates, protein, and fat.*
Objectives: *To assess knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus. To find out the association between knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus with selected demographic variable among adults.*
Methods*: The study adopted a Descriptive cross sectional survey research design, 50 adults residing in a selected rural area of Rajkot were selected as sample of the study using non-probability convenience sampling technique. The tool used for the study are demographic variables and self-structured knowledge questionnaire. Data were analyzed by using descriptive and inferential statistics.*
Results: *The findings of the study revealed that, out of 50 adults majority 23(46%) of samples were in the age between 30-35 years, majority 27 (54%) of samples belonged to female and remaining 23(46%) of samples belonged to male. About their education, 21 (42%) samples were illiterate, 7(14%) of samples were high school and 9(18%) of samples were higher secondary and above. About their occupation, 17 (34%) of samples were doing business and majority 20(40%) of sample were doing farming. Majority of samples 39 (78%) were married, 22 (44%) of samples had history of diabetes mellitus taking treatment and 28(56%) samples were not taking treatment. 9(18%) of samples were smokers and 15(30%) of samples were alcoholic. 12(24%) samples had moderately adequate level of knowledge, 7(14%) of samples had adequate level of knowledge and 31(62%) of the samples had inadequate level of knowledge regarding risk factors and prevention of Diabetes Mellitus. There was significant association of knowledge regarding Diabetes Mellitus among adults with the selected demographic variables.*
Conclusion: *The study concluded that knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults was adequate and moderate knowledge.*
Keywords: *Descriptive Study, Assess, Knowledge, Risk Factors.*

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I. Introduction

Diabetes Mellitus is a silent disease and is now recognized as one of the fastest growing threat to public health in almost all countries of the world. Prevention is better than cure and is less expensive. Around 150 Million people suffer from diabetes in the World out of which above 35 million are Indians the highest in any country. Every fifth person who suffer from diabetes in the world today is an Indian.

Diabetes mellitus (DM) is a chronic metabolic disease. Diabetes has led to increased morbidity and mortality. The prevalence of diabetes is reaching epidemic levels worldwide, in developing countries like India due to rapid urbanization. The World Health Organization (WHO) has estimated that the number of people with DM is expected to rise from 171 million in 2000 to 366 million in 2030, as a result of population aging and urbanization. Urbanization through faulty dietary habits, sedentary lifestyle, and stress has contributed to a rise in levels of overweight and obesity increasing the risk of diabetes. Individuals with a family history of diabetes are at higher risk of developing the condition. Besides their reduced productivity, diabetes further imposes a high economic burden in terms of health-care expenditure, lost productivity, and foregone economic growth. The total direct cost of the management of diabetes has doubled in 2005 compared to 1998 levels.

Objectives of the study:
1. To assess the level of knowledge regarding risk factors and prevention of diabetes mellitus among adults in a selected area. .
2. To find out the association between knowledge level regarding risk factors and prevention of diabetes mellitus among adults and their selected demographic variables.

Assumptions
Adults have some knowledge regarding risk factors and prevention of diabetes mellitus.

Delimitation
The study was delimited to adults residing in selected rural area of Rajkot district.

II. Materials And Methods

Research Approach:
Quantitative research approach was adopted for this study.

Research Design:
Non-experimental descriptive cross-sectional study design was used in this study. In this design, the investigator assessed the level of knowledge regarding risk factors and prevention of diabetes mellitus among adults.

Variables of the study
Study Variables:
Knowledge of adults regarding risk factors and prevention of diabetes mellitus.

Demographic Variables:
The demographic variables such as age, gender, marital status, education, occupation, social habits, history of diabetes mellitus, type of physical activity were included.

Setting of the study:
The study was conducted in Gomta, Gondal of Rajkot district.

Population:
In this study, population was consisted of adults with the age group between 30- 50 years.

Sampling technique and Sample Size:
A total of 50 adults were selected for the study using convenient sampling technique.

Criteria for sample selection:
Inclusion Criteria:
- Adults who were in the age group between 30-60 years.
- Adults who were residing in a selected rural area of Rajkot (Gomta, Gondal)
- Adults who were willing to participate at the time of data collection.
- Adults who were available at the time of data collection.

Exclusion Criteria:
- Adults who were below 30 years of age.
- Adults who were not willing to participate at the time of data collection.
- Adults who were not available at the time of data collection.

Tool used for Data Collection:
The data collection tool was consisted of 2 sections.
Section A: A demographic profile comprised of the information regarding age, gender, marital status, education, occupation, social habits, history of diabetes mellitus, type of physical activity.
Section B: Structured interview questionnaire was used to assess the level of knowledge on diabetes mellitus. It was consisted of 23 questions. The correct answer carried 1 score and the incorrect answer carried 0 score.
Score Interpretation: <50%= inadequate knowledge, 51-75%= moderately adequate knowledge, > 75%= adequate knowledge**.**

Reliability of the tool

Reliability of the knowledge questionnaire was established by test- retest reliability technique, using these values co-efficient correlation was done with the help of Karl Pearson's formula. The reliability score obtained was r = 0.93 for knowledge which showed knowledge questionnaire highly feasible and reliable.

Ethical consideration

Participation of the subjects in the study was voluntary and informed consents were obtained from all the participants. Confidentiality and anonymity of information were maintained.

Data analysis :

Descriptive and inferential statistics were used for the analysis of demographic characteristics and level of knowledge regarding risk factors and prevention of diabetes mellitus.

Table 1: Frequency and Percentage Distribution of Demographic Variables.
N=50

Sr. No.	Demographic variables	Frequency (f)	Percentage (%)
1	**Age (Years)**		
	a. 30-35	6	12
	b. 36-40	14	28
	c. 41-45	17	34
	d. 46-50	13	26
2	**Gender**		
	a. Male	23	46
	b. Female	27	54
3	**Education**		
	a. Illiterate	21	42
	b. Primary	5	10
	c. Middle school	8	16
	d. High school	7	14
	e. Higher secondary and above	9	18
4	**Occupation**		
	a. Service	13	26
	b. Business	17	34
	c. Farming	20	40
5	**Marital status**		
	a. Single	6	12
	b. Married	39	78
	c. Widowed	5	10
6	**Diabetes mellitus treatment**		
	a. Yes	22	44
	b. No	28	56
s7	**Social habit**		
	a. Smoking	9	18
	b. Alcohol	15	30
8	**Smoking habit**		
	a. Less than 10 years	5	10
	b. 11-15 years	2	4
	c. 16-20 years	2	4
	d. More than 21 years	0	0
9	**Number of cigarettes per day**		
	a. 1-10	5	10
	b. 11-20	4	8
10	**Habit of alcohol intake**		
	a. Monthly once	3	6
	b. Weekly once	10	20
	c. Daily	1	2
	d. occasionally	1	2
11	**Physical activity**		
	a. Sedentary	12	24
	b. Moderate	15	30
	c. Active	23	46

Table 1: revealed that, 23(46%) of samples were in the age between 30-35 years, 11(22%) were in the age group between 36-40 years, 10(20%) of samples were in the age between 41-45 years and 6(12%) of samples were in the age between 46-50 years. 27 (54%) of samples belonged to female and remaining 23(46%) of samples belonged to male. 21 (42%) samples were illiterate, 5(10%) of samples were primary school

education, 8 (16%) of samples were middle school education, 7(14%) of samples were high school and 9(18%) of samples were higher secondary and above. About their occupation, 13 (26%) of samples were doing service, 17 (34%) of samples were doing business and 20(40 %) of sample were doing farming.

Majority of samples 39 (78%) were married, 6 (12%) of samples were single and 5(10%) of samples were widowed. 22 (44%) of samples had history of diabetes mellitus taking treatment and 28(56%) samples were not taking treatment. 9(18%) of samples were smokers and 15(30%) of samples were alcoholic. 5(10%) of samples were smoker less than 10 years, 2 (4%) of samples were smoker between 11-15 years 2(4%) of samples were smoker between 16-20 years and 0(0%) of sample were smoker more than 21 years. 5(10%) of samples smoked nearly 1-10 cigarettes per day and 4(8%) of samples smoked approximately 11-20 cigarettes per day. Among 15 samples, majority of samples 10(20%) had alcohol weekly once, 3 (6%) of samples had alcohol monthly once and 1(2%) of samples had alcohol daily and occasionally. 23(46%) of samples were active, 12(24%) of samples were sedentary type of physical activity and 15(30%) of them were moderate type of physical activity.

Table 2: Analysis on Level of Knowledge on Diabetes Mellitus among participants (N=50)

Sl. No.	Level of Knowledge	Frequency(f)	Percentage (%)
1	Inadequate (<50%)	31	62
2	Moderately adequate (51-75%)	12	24
3	Adequate (>75%)	7	14

Table 3 presented that 12(24%) samples had moderately adequate level of knowledge, 7(14%) of samples had adequate level of knowledge and 31(62%) of the samples had inadequate level of knowledge regarding diabetes mellitus.

III. Discussion:

In this present study, 50 samples were selected based on the inclusion criteria. Regarding age group distribution, 23(46%) of samples were in the age between 30-35 years, 11(22%) were in the age group between 36-40 years, 10(20%) of samples were in the age between 41-45 years and 6(12%) of samples were in the age between 46-50 years.

Gender distribution among participants, 27 (54%) of samples belonged to female and remaining 23(46%) of samples belonged to male. According to the education distribution, 21 (42%) samples were illiterate, 5(10%) of samples were primary school education, 8 (16%) of samples were middle school education, 7(14%) of samples were high school and 9(18%) of samples were higher secondary and above. About their occupation, 13 (26%) of samples were doing service, 17 (34%) of samples were doing business and 20(40 %) of sample were doing farming.

According to marital status distribution of samples, majority of samples 39 (78%) were married, 6 (12%) of samples were single and 5(10%) of samples were widowed. 22 (44%) of samples had history of diabetes mellitus taking treatment and 28(56%) samples were not taking treatment. About the social status, 9(18%) of samples were smokers and 15(30%) of samples were alcoholic.

5(10%) of samples were smoker less than 10 years, 2 (4%) of samples were smoker between 11-15 years 2(4%) of samples were smoker between 16-20 years and 0(0%) of sample were smoker more than 21 years. 5(10%) of samples smoked nearly 1-10 cigarettes per day and 4(8%) of samples smoked approximately 11-20 cigarettes per day.

Among 15 samples, majority of samples 10(20%) had alcohol weekly once, 3 (6%) of samples had alcohol monthly once and 1(2%) of samples had alcohol daily and occasionally. According to the physical activity, 23(46%) of samples were active, 12(24%) of samples were sedentary type of physical activity and 15(30%) of them were moderate type of physical activity.

According to the level of knowledge of samples, 12(24%) samples had moderately adequate level of knowledge, 7(14%) of samples had adequate level of knowledge and 31(62%) of the samples had inadequate level of knowledge regarding diabetes mellitus and its risk factors. There was significant association between knowledge with selected demographic variables such as education, occupation and physical activity.

Since the prevalence of type 2 diabetes is low in Indians aged less than 30 years, the investigator selected the samples aged 30 years and above to the study. However, younger individuals (e.g., aged 20-30 years) are generally more concerned about health issues, such as being overweight or obese, as compared with older people. Thus, future studies on assessing the knowledge of diabetes should include younger individuals.

IV. Conclusion:

The overall level of knowledge of diabetes about its risk factors was generally higher than that reported by previous studies conducted among the general population in India. However, a very low proportion of our

participants knew that diabetes can affect key organs such as the eyes, heart, feet, and nerves, and nearly a quarter were not aware that diabetes can be prevented. This is alarming given that these are high-risk individuals for diabetes. Therefore, give more attention to educating high-risk individuals about diabetes complications and the importance of and strategies for diabetes prevention. Majority of adults were unaware of DM itself and associated risk factors. Raising public awareness of the disease through outreach programmes and mass media should be planned and implemented.

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