

Effect of educational status and livelihood on knowledge, attitude and practice on metabolic syndrome components of rural diabetic South-Indian population

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Abstract

Introduction:

Non-communicable diseases like diabetes mellitus, dyslipidemia and hypertension are the leading causes of vascular diseases. They are also included as components of metabolic syndrome (MetS). MetS in most of the cases is controllable and preventable by following a healthier lifestyle. Education and livelihood play an important role among the components of MetS, hyperglycemia is considered to be the most common. Hence, the study was designed to study the Knowledge, attitude, and practice (KAP) of MetS in diabetic patients reporting to a private tertiary medical center in South-India.

Methodology:

The cross-sectional study included 150 patients who were getting treated for diabetes mellitus at General Medicine out-patient department. The participants answered a detailed questionnaire which included personal details, and details regarding diabetes mellitus, dyslipidemia and hypertension was obtained.

Result:

Educational status was varying with 17% having completed school education, 72% being under-graduates and 11% post-graduates. Among the participants, 84% belonged to rural and 16% to urban population. Self-activity differed with 71% active and 29% sedentary lifestyle. The knowledge of the participants on the factors causing, manifestations, investigations and complications of diabetes mellitus, dyslipidemia and hypertension. The importance of dietary fiber and exercise was also analyzed. Almost 80% of the participants reported the effect of fiber as well as routine exercises had influenced in prophylaxis of diabetes. Analyzing their attitude and practice gave us a clear knowledge about their improper practice of following a healthy diet, regular health checkup and exercise.

Conclusion:

The conclusion of the study is that there is a need to educate the population based on their educational status and livelihood to improve their knowledge and to have a more positive attitude on self-activities along with the different modes of treatment.

Keywords: Diabetes, dyslipidemia, hypertension, Metabolic syndrome (MetS), Knowledge, Attitude, and Practice (KAP).

Introduction:

Metabolic syndrome (MetS) is an aggregate of various factors including, hyperglycemia, increased waist circumference, hypertension, decreased HDL-C and hypertriglyceridemia as reported by the National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III) panel¹. Diabetes mellitus, dyslipidemia and hypertension are considered to be the non-communicable diseases which are considered to be risk factors of various vascular diseases including coronary artery disease. Knowledge and attitude seem to play an important but a simpler role in overcoming these conditions. Lack of knowledge, attitude and unhealthy practices in day-to-day life can improve the health condition in a considerable manner.

The meta-analysis of 27 studies and 45,811 study participants by Belete R revealed 23.7 % prevalence of MetS worldwide². About 30% was found to be affected with MetS in India according to a systematic review and meta-analysis conducted by Krishnamoorthy Y et al³. In Tamil Nadu, the prevalence of MetS was found to be 16.7% reports a study conducted by Selvaraj P et al⁴.

A study conducted by the Indian Council of Medical Research (ICMR) study reports that 135 million have general obesity and 153 million is suffering from obesity⁵.

The urban regions of Tamil Nadu had a diabetic prevalence of 14.4% and in rural regions it was 7.4%, according to ICMR-INDIAB⁶. Another study reported prediabetes affected 77.2 million and diabetes affected 62.4 million people, respectively in India⁷. Hyperglycemia was the most common among those with MetS⁸.

Interventions in knowledge, attitude and practices of the population should be initiated by the healthcare providers to avoid a further increase in the prevalence of diabetes.

Materials and methods:

A Self-administered questionnaire was obtained from the 150 study participants. This study involved diabetic patients attending general medicine out-patient department of a tertiary health care center. The participants belonged to different age groups of range 18-50. They were selected randomly from the general medicine out-patient department and were involved in the study after obtaining informed and written consent. A pilot study involving 25 patients was conducted prior to the current study to finalize the questionnaire.

The questions are as follows: 7 personal questions, 3 questions on knowledge and 3 questions on attitude and practice. The questions were framed based on the status of their education obtained from the personal questions. The entire question range on knowledge, attitude and practice was framed on diabetes, dyslipidemia and hypertension. Factors influencing the above-

mentioned disease conditions like fiber diet and physical exercise were considered in attitude and practice. All the questions were framed both in Tamil (native language) and English. The questionnaire did not contain any information on their identity.

Results:

The features of the study participants are seen in Table 1. The study participants were grouped based on their education and livelihood. Among the study participants, 17% had completed schooling, 72% had completed their undergraduation in various fields and 11% had postgraduate education [Table 2 and Figure 1]. Rural population dominated the study with a frequency of 84% and urban population were of 16% [Table 3 and Figure 2]. The participants also had difference in self-activity with active lifestyle of 71% whereas, 29% followed sedentary form of lifestyle [Table 4]. The importance of the treating physicians was revealed from the source of information with 91% being aware of the various health-based questions from their treating physicians [Table 5].

Table 1: Features of the study participants

Characteristics	Frequency	
Median of the age	41	
Sex (N=150)	41% females	59% males
Diabetes Mellitus (duration in years) (Mean ± Standard deviation)	15 ± 2	

Table 2: Education level of the study participants

Education	Frequency
School level	17
Under-graduation	72
Post-graduation	11

Figure 1: Pie-chart on education level

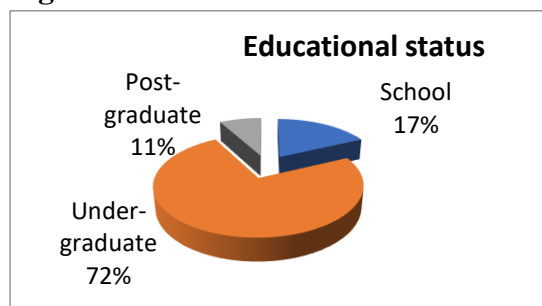


Table 3: Livelihood of the study participants

Livelihood	Frequency
Rural	84
Urban	16

Figure 2: Pie-chart on Livelihood

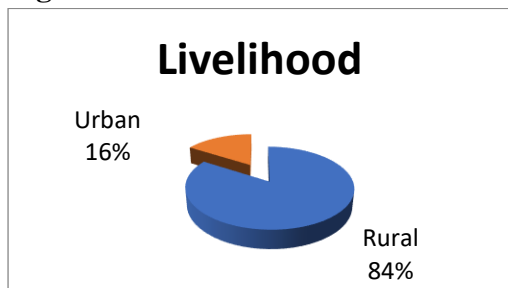


Table 4: Self-activity of the study participants

Self-activity	Frequency
Active	71
Sedentary	29

Table 5: Source of information to the patients

Source of information	Frequency
Treating Physician	91
Media	3
Mixed	6

The knowledge of the participants on diabetes mellitus, dyslipidemia and hypertension is evident from the factors influencing the same [Table 6].

Table 6: Knowledge of the study participants in various aspects

Knowledge on diabetes, dyslipidemia and hypertension	Frequency aware
Factors causing	72
Manifestations	43
Investigations	86
Complications	47

The level of the knowledge was classified based on the clarity of the explained answers [Table 7].

Table 7: Knowledge on diabetes, dyslipidemia and hypertension

Knowledge of diabetes, dyslipidemia and hypertension	Frequency of clear explanation	Frequency of unclear explanation
Factors causing	66	34
Manifestations	51	49
Investigations	71	29
Complications	58	42

Among the participants, a very few were aware of the fibrous diet and exercise in preventing diabetes, dyslipidemia and hypertension [Table 8].

Table 8: Knowledge on fibrous diet and regular exercise

Knowledge of diet and exercises	Frequency aware
Fibrous diet	17
Regular exercise	91
Fibrous diet and Regular exercise	81
Other dietary practice	8

The participants were also assessed with questions on attitude and practice on diet, exercise, and health care [Table 9].

Table 9: Attitude and practice on the diet, exercise, and health care

Attitude and practice on the diet, exercise, and health care	Frequency aware
Balanced diet	12
Regular and proper exercises	26
Routine health monitoring	31
Self-sufficient	39

A significant relationship was obtained between the factors affecting like healthy diet, exercise, routine health monitoring and self-sufficiency, and various aspects about diabetes, dyslipidemia and hypertension [Table 10].

Table 10: Relationship between different aspects of diabetes mellitus, dyslipidemia and hypertension with diet, exercise, and health care.

Aspects of diabetes, dyslipidemia and hypertension	Association parameters (Fisher exact P-value)			
	Regular diet	Regular exercise	Regular checkups	Self-responsibility
Factors causing	0.0006**	0.0103*	0.0831	0.0267*
Manifestations	0.0390*	0.3011	0.7729	0.5882
Investigations	0.0001**	0.0017**	0.0203*	0.0059**
Complications	0.0039**	0.0405*	0.1957	0.1044

*p < 0.05 – statistically significant, **p < 0.01 – highly significant

Discussion:

The study included 150 diabetic patients were included in the study who belonged to different types of the population with various levels of knowledge, attitude, and practice on the different

components of MetS and various lifestyle activities. Among the study population, 17% had completed their schooling, 72% were under-graduates and 11% had completed their post-graduation. The effect of education status of the study participants was observable as 72% were aware of the causes of diabetes mellitus, dyslipidemia and hypertension.

The participants of the study belonged to urban (16%) and rural (84%). Out of the participants, 71% followed active and 29% followed sedentary lifestyle respectively. The questionnaire framing was based on these features of the study participants.

Hyperlipidemia was found to be most predominant features of MetS, reports a study conducted by Selvaraj P et al⁴ and hyperglycemia was the most common of MetS features according to another study⁸. Decreased physical activity were related to an increased prevalence of obesity, reports a study conducted by Sen J et al⁹. A study conducted by Kant R et al insisted on educative sessions to improve the KAP about diabetes¹⁰, whereas CK Priyanka Raj et al reported that knowledge and attitude was better when compared to practice about diabetes in Karnataka¹¹. Another study by Jagadeesan et al reported that only 10% of the college students followed physical activities to overcome obesity though 73% was aware of it.

Obesity was common even among medical students with 68% prevalence according to Shah T et al¹³. On the other hand, 78% of medical students were aware of the preventive role of physical activities in obesity, reports a study by Shrivastava et al¹⁴. The picture was better among Korean students where 49% were following routine physical activity, evident by a study conducted by Kim O et al¹⁵. This was in accordance with the study by Konduru et al where about 50% of diabetics were aware of the effect of physical activity on diabetes¹⁶. But according to the present study, 26% were following routine physical activity, despite 91% being aware of the same.

The current study also insists the major role of the treating physicians as the principal knowledge provider for about 91% of the study participants. This was further supported by a study conducted by Shah VN et al which reports that about 50% of the consultation lasted for less than 5 minutes¹⁷.

Around 50% of diabetic patients were taking care of self, reported a study by Tham et al¹⁸. This was in contrast to the present study with just 31% having a regular checkup. A very few (9%) of diabetics in Karachi undergo retinal examination regularly, reports a study by Memon et al¹⁹.

According to a study conducted by Fathima K et al in Bangladesh, there was a requirement for educative sessions on preventing diabetes mellitus and its complications among poor and less educative background²⁰. This was in concordance to the present study.

Conclusion:

From the study, it is evident that the educational status and livelihood play a very important role in the knowledge, attitude, and practice on the components of the metabolic syndrome (MetS) like diabetes mellitus, dyslipidemia and hypertension. The study also concludes that, the healthcare providers play an inevitable role. Diabetes mellitus, dyslipidemia and hypertension are the lifestyle diseases that can be managed and treated to a greater degree by adapting healthy lifestyle changes. This shall be achieved by including educative sessions as a portion of the routine physician consultation.

Acknowledgment:

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Conflict of interest:

Declared none by the authors.

Ethical clearance:

Institutional Ethical Committee (No:1502/IEC/2018) clearance was obtained before conducting the study. The participants were allowed to participate in the study after obtaining informed and written consent.

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