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Effectiveness of Educative Session on Knowledge, Attitude and Practice, on Diabetes and Dyslipidemia, of Patients Attending a Private Medical College Hospital in South-India

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Diabetes mellitus and dyslipidemia are non-communicable diseases that can be prevented and controlled by maintaining a healthy lifestyle. Knowledge, attitude, and practice (KAP) in patients will provide information of much importance in Advocacy (to set guidelines by the Healthcare providers), Communication (increase awareness in subpopulation), and Social mobilization (improve services and expand community support). The study aimed to assess the effectiveness of an educative session on Knowledge, attitude, and practice (KAP) in patients attending a private medical college hospital on diabetes and dyslipidemia in the South-Indian population. The study was cross-sectional which included 100 patients (41 female and 59 male) of 18-50 years of age attending the hospital and the Central clinical laboratory for various disease conditions. A self-administered questionnaire on personal aspects and diabetes and dyslipidemia was collected. Among the study participants, 18% completed school education, 74% completed under-graduation, and 8% completed post-graduation. The frequency of livelihood showed 84% from rural and 16% from an urban background. Nearly 71% were active and 29% were sedentary performing self-activity. The source of information regarding the treatment of patients was also obtained from the patients to implement the same in advocacy. The knowledge of the study group on various aspects including the causes, symptoms, tests, complications of diabetes mellitus, lipid profile, dietary fiber, and exercises was analyzed. We found clarity of explanation about diabetes improved well after the educative session. Around 80% of responders believed that both fiber and routine exercises would contribute to preventing diabetes. Analysis of the attitude and practice revealed a significant knowledge of practicing proper diet, exercises, and routine health care after the educative session. We conclude that healthcare providers shall focus on educating the patients according to their needs with the knowledge to have positive attitudes on healthy lifestyle practices in addition to the appropriate treatment.

Keywords: Attitude; Diabetes; Dyslipidemia; Knowledge; Practice (KAP).

Non-communicable diseases like diabetes mellitus and dyslipidemia are on the floor of insulin resistance favored by a common, prevalent condition called obesity. Although it seems very simple to control and get rid of the condition, lack of knowledge or unawareness, attitude towards it, and wrong daily life practices are likely to affect the maintenance of a healthy lifestyle.

Statistics by the W.H.O in 2016 say that worldwide obesity has nearly tripled since 1975.

In 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese. 41 million children under the age of 5 were overweight or obese in 2016.

The phase 1 study conducted by The Indian Council of Medical Research–India Diabetes (ICMR-INDIAB) study has estimated that 135 million and 153 million have general and abdominal obesity respectively[1].

The study aims to assess the knowledge, attitude, and practice of the patients regarding diabetes and dyslipidemia including the lipid profile and blood sugar parameters. The collected information is of much importance in

Advocacy – to set guidelines by the Healthcare providers

Communication – increase awareness in subpopulation and

Social mobilization – improve services and expand community support.

The knowledge, attitude, and practice were evaluated before and after an educative session to emphasize the importance of the knowledge and the knowledge provider in preventing and treating the diseases.

According to a study conducted by ICMR-INDIAB during the year 2008 to 2010 and published online in 2017, the prevalence of diabetes in urban regions was 14.4% and in rural regions was 7.4% in Tamilnadu[1].

The ICMR-INDIAB study group has also published several important subgroup analyses of their findings of the phase 1 study. Among the lipids, the group confirmed that reduced high-density lipoprotein (Dyslipidemia) was the most common lipid abnormality observed in almost three-fourths of the subjects[2]. Similarly, it has been estimated that prediabetes and diabetes are affecting 77.2 and 62.4 million people, respectively in India[3].

The increasing prevalence of diabetes urges immediate intervention of knowledge and changes of attitude and practices of the population by the healthcare providers.

MATERIALS AND METHODS

The study is a cross-sectional study involving patients attending the Outpatient and the participants undergoing MHC (Master Health Checkup) at SRM MCH & RC of age group

18-50 participated in the study after obtaining written consent. The participants were selected on a Simple random sampling from Outpatient identity numbers on alternate days of data collection, to avoid bias.

A Self-administered questionnaire was prepared based on a pilot study conducted two weeks before the original study, which included 20 patients attending different departments (Master health checkups, General medicine, surgery, orthopedics, pulmonology, and nephrology) of the hospital as an accessible population. The study population was then decided to be involving the Departments of Master health checkups and General medicine. The Self-administered questionnaire was prepared based on the pilot study. The questionnaire included 7 personal questions based on which the patients were grouped under different categories like educative status, self-activity, and livelihood. The questionnaire consisted of 3 questions based on the knowledge of the individual on diabetes and dyslipidemia and 3 questions on attitude and practice of the individual on the same. Dietary fiber, healthy dietary habits, and regular exercise were included in attitude and practice. The questions were explained to a few of them who found difficulty in understanding the same. After analyzing the answers, a set of study materials were framed to meet the educative status of the individual as school, undergraduate, and post-graduate to educate them.

The study population was asked to inform the principal investigator before attending the outpatient and MHC departments. The same set of questionnaires was given to the individual to answer. The period between the two questioning sessions was maintained as a minimum of two weeks and a maximum of 6 months. Those who were not attending the checkup were requested to answer the same on the telephone by the investigators.

To avoid bias, the patients who are not being treated by the authors will only be included. The questionnaire will also not reveal the identity of patients or their treating doctors. Patients beyond the age group 18-50 and medical and healthcare workers were excluded from the study.

RESULTS

The study population (100) was provided with a self-administered questionnaire on personal aspects and diabetes and dyslipidemia. The characteristics of the study population are evident in Table 1. Based on the personal questions, they were grouped based on their educational status, livelihood, and self-activity. Among the study participants, 18% were schooling, 74% were undergraduates and 8% were postgraduates [Table 2]. The frequency of livelihood showed 84% from rural and 16% from an urban background in study participants. 71% were following active and 29% were following sedentary self-activity. The source of information regarding the treatment of patients was also obtained from the patients to implement the same in advocacy. It was also found that 91% of the population was aware of the questions asked in the questionnaire from their treating physicians.

Table 1. Characteristics of the study population

Characteristics	Distribution	
Age (Median)	41	
Gender (N=100)	41 female	59 male
Duration of Diabetes Mellitus (Mean ± Standard deviation)	15 ± 2 (years)	

Table 2. Educational status of the study population

Education	Percentage (Frequency)
School	18
Under-graduate	74
Post-graduate	8

This indicates the inevitable role of doctors in educating society.

The knowledge of the study group on various aspects including the causes, symptoms, tests, complications of diabetes mellitus, lipid profile parameters, dietary fiber, and exercises was calculated as percentage or frequency before

Table 3. Knowledge of the study population in various aspects

Knowledge on	Number of participants aware BES	Number of participants aware AES	p-Value
Causes of diabetes	72	86	0.025*
Symptoms of diabetes	43	77	0.019*
Diabetic profile tests	86	91	0.000*
Complications of diabetes	47	63	0.008*
Good and Bad cholesterol	62	81	0.022*

*$p < 0.05$ – statistically significant, BES - Before the educative session, AES - After the educative session

Table 4. Percentage of improvement after the educative session

Knowledge of Diabetes	Clear explanation			Unclear explanation		
	BES	AES	Outcome	BES	AES	Outcome
Causes	66	73	7	34	27	7
Symptoms	51	62	11	49	38	11
Profile tests	71	82	11	29	18	11
Complications	58	74	16	42	26	16
Cholesterol	19	39	20	81	61	20

and after the educative session. We found the participants significantly gained knowledge about diabetes and dyslipidemia after the educative session [Table 3].

The knowledge level was classified as clear and unclear based on the explained answers. We assessed the clarity of explanation about diabetes before and after the educative session. We observed there is an improvement in clear explanation and decline in the unclear explanation about the knowledge of causes 7%, symptoms 11%, profile tests 11%, complications 16% of diabetes

Table 5. Association of knowledge of diabetes with explanation

Knowledge of Diabetes	Clear Explanation			Unclear Explanation		
	BES	AES	P-Value	BES	AES	P-Value
Causes	66	73	0.8157	34	27	0.2275
Symptoms	51	62	0.1815	49	38	0.0045*
Profile tests	71	82	0.7406	29	18	0.1394
Complications	58	74	0.8967	42	26	0.0204*
Cholesterol	19	39	0.2045	81	61	0.0245*

*$p < 0.05$ – statistically significant

Table 6. Knowledge of the study population on diet and exercises

Knowledge of diet and exercises	Number of participants aware BES	Number of participants aware AES	p-Value
Fiber involvement in diet	17	35	0.036*
Routine exercises	91	96	0.013*
Both fiber and exercises	81	92	0.004*
Practicing other diet habits	8	6	0.045*

*$p < 0.05$ – statistically significant

Table 7. Attitude and practice on the diet, exercise, and health care

Attitude and practice on the diet, exercise, and health care	Number of participants aware before the educative session	Number of participants aware after the educative session	p-Value
Practicing a regular balanced diet	12	48	0.039*
Practicing regular exercises	26	65	0.014*
Regular health checkups	31	61	0.000*
Feeling Self-responsible	39	82	0.002*

*$p < 0.05$ – statistically significant

Table 8. Association of knowledge of diabetes with diet, exercise, and health care

Knowledge of Diabetes	Association parameters (Fisher exact P-value)			
	Regular diet	Regular exercise	Regular checkups	Self-responsibility
Causes	0.0006**	0.0103*	0.0831	0.0267*
Symptoms	0.0390*	0.3011	0.7729	0.5882
Profile tests	0.0001**	0.0017**	0.0203*	0.0059**
Complications	0.0039**	0.0405*	0.1957	0.1044
Cholesterol	0.0015**	0.0269*	0.1717	0.0754

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

and cholesterol 20% after the educative session [Table 4]. We found that there is a significant association between the knowledge of diabetes and unclear explanation before and after the educative session which indicates that there is a substantial development of knowledge of diabetes among the study participants who were unclear about diabetes [Table 5]. This indicates the beneficial outcome of the educative session.

In our study population, we surveyed about the knowledge of diet and exercise. We observed that very few people were aware of fiber involvement in diet and other diet habits alone were sufficient in the prevention of diabetes. Most of the study population was aware that only routine exercises were enough to prevent diabetes. Around 80% of the responders believed that both fiber and routine exercises would contribute to the same. We found a significant rise in the percentage of awareness on the importance of both fiber and exercises in preventing diabetes [Table 6]. These results suggest that the study population has enhanced knowledge about the diet and exercises for prevention and management of the disease.

The group of patients was subjected to questions on their attitude and practice on diet, exercise, and health care before and after the educative session. Analysis before educative session resulted that very less percentage of the study population was aware of the attitude and practice whereas others significantly gained knowledge of practicing proper diet, exercises and routine health care after educative session [Table 7]. We observed there is a significant association of diet, regular exercise, regular checkup, and self-responsibility with prominent knowledge about the causes, symptoms, profile tests, complications of diabetes, and cholesterol status among survey responders [Table 8].

DISCUSSION

The study included different classes of the population with dissimilar levels of knowledge, attitude, and practice on diabetes and dyslipidemia. Out of the total study population of 100 patients, 18% had school level education, 74% had education at the under-graduation level and 8% were post-graduates. The importance of the education status is explained by the study conducted by Senet al, with a significance of $p<0.05$[4]. The reflection of more graduates participating in our study was evident as our study had 72% and 43% of the study group aware of the causes and complications respectively. These figures rose to 86% and 77% after a session of information. This was in contrast to the study conducted by Kant et al and Priyanka Raj et al[5,6].

The study population was also sorted based on the area to which they belong as rural and urban as 84% and 16% respectively. Self-activity was used to differentiate the total population as active (71%) and sedentary (29%). These characteristics were used mainly to understand the influence of the above characteristics on their knowledge, attitude, and practice on the given set of questions.

In a study conducted by Jagadeesan et al among college students, 73% had a belief that physical activity to overcome obesity, but around 90% took no steps to overcome[7] it. About 68% of medical students were obese says a study conducted by Shah T et al[8]. Another study conducted among medical students by Shrivastava et al showed that 78% were aware that physical exercises would prevent obesity[9]. Kim et al found that around 49% of Korean students were undertaking regular exercise[10]. A study conducted by Konduru et al says only 50% of diabetics were aware of the importance of physical activity on diabetes[11]. This was per our study with only 26% practicing regular exercise despite 91% being aware of the fact. This reflects their poor attitude and practice. However, this had improved to 65% after the educative session.

It was evident that the principal information and knowledge provider for most of the patients (91%) are their treating physicians. This in turn highlights the role of the doctors and the institution in communication and social mobilization of the population attending the treatment center this as per a study conducted by Shah et al[12], which says around 50% of the study group had consultation time less than 5 minutes.

Tham et al conducted a study showing about 50% of diabetics were taking self-care[13]. Another study by Memon et al shows that only 9% of diabetics in Karachi were undergoing regular retinal examination[14]. This was in contrast to our study showing only 31% visiting the hospital for a regular checkup.

CONCLUSION

This study concludes that the knowledge, attitude, and practice of the patients attending the tertiary care center are different based on their education status and livelihood. From the study, it is also evident that the principal knowledge or information providers are their treating physicians, who play a major role in educating the patients. Diabetes mellitus and dyslipidemia are metabolic diseases that can be controlled and treated to a certain extent by regular physical activities, a healthy diet, and lifestyle changes with the help of simple educative sessions and counseling.

This emphasizes the importance of educative and counseling sessions to be provided as a routine part of the treatment plan to all the patients attending the tertiary care center for the treatment of diabetes and dyslipidemia.

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Conflict of interest

Declared none.

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Self.

Ethical clearance

The study was conducted after obtaining clearance from the Institutional Ethical Committee (No:1502/IEC/2018). The participants of the study were involved in the study after written consent.

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