ScienSage

Journal of Advanced Scientific Research

Available online through http://www.sciensage.info/jasr

ISSN
0976-9595
Research Article

Awareness on Type II Diabetes and Its Complication among Sivaganga District Population in Tamilnadu: A Cross Section Survey

Devi Kasinathan[1], Nisha Rajagopalan Girijakumari[1], Prabhu Narayanan Marimuthu[1*], Manikandan Ramar[1], Karthikeyan Muthusamy[2]

[1]*Department of Animal Health and Management, Alagappa University, Karaikudi- 630 003.*

[2]*Department of Bioinformatics, Alagappa University, Karaikudi- 630 003.*

**Corresponding author: 71gnmprabhu@gmail.com*

ABSTRACT

Diabetes and its associated complication have been increasing dramatically worldwide. Prevalence of diabetes is higher in developed than in developing countries, however past two decades diabetes mellitus was reported higher in developing countries. Diabetes and its associated complication awareness are lacking, adequate baseline information is mandatory to the public to overcome this problem. Hence the present study was undertaken to assess the knowledge about the awareness of diabetes mellitus and its complication. We conducted a cross sectional and face to face survey on adult's age group (30-80) in Sivaganga district. The questionnaire includes general status, causes, family history, risk factors and alternative treatment practices. A total of 539 adult were interviewed, 284 were diabetics and 255 were non diabetics. Among diabetic, Fifty three per cent of adults had hyperglycemia. Overall including diabetic and non-diabetics, 74.11% of them were not aware of the long term effects of diabetes and its complication. Merely 48% of them were aware of the alternative treatment practices for diabetes and among the 48% few of them know the diet plan. Statistic analyses were done using SPSS-19 software. Analysis of these areas would have a significant suggestion to health care professionals for conducting future public education programme.

Keywords: Diabetes mellitus; associated complication; awareness; alternative treatment practices

1. INTRODUCTION

Diabetes mellitus (DM) is a polygenic metabolic and heterogeneous disease condition in which the body not succeeds to produce enough insulin, characterized by abnormal glucose homeostasis [1]. The number of adults with clinical diagnosis of diabetes has been increasing dramatically worldwide. Prevalence of diabetes is higher in developed and in developing countries, but the major increase in people with diabetes was reported to occur in developing countries especially Asian countries, in the age group between 45-65 years. There are more women than men with diabetes, especially in developed countries [2]. Several subtypes of the DM exist with multiple underlying pathogenic pathways and have been classified based on the etiology [3]. As a clinical condition, there are two major types, type I diabetes and type II diabetes. Type II diabetes (T2D) is found to be the most prevalent form of diabetes accounting for accounts for 90 % of total diabetes cases [4]. An explosive increase in the prevalence of T2D is predicted for the future due to several reasons including lifestyle changes. Approximately 16 million to 17 million people already have the diabetic condition and an equal number are thought to be "prediabetic", having early symptoms but not yet the full manifestation of the disease. Even children are no longer exempt to develop T2D that until recently middle age people also affected. Ten countries estimated to have the uppermost numbers of people with diabetes in 2000 and 2030 [5]. The largest increase in the prevalence numbers is found in India, China and other developing countries. Adequate baseline information about the prevalence and awareness regarding diabetes activities is not available in Sivaganga district, Tamilnadu. Hence this study was taken up to assess the level of the diabetic awareness, knowledge about diabetic complication and alternative treatment practices through investigative and assessor research among the Sivaganga district. Such data are tremendously important to an understanding of the level of public awareness and helpful to health educators to plan for national diabetic control program.

2. MATERIAL AND METHODS

A cross sectional and face to face interview on adult's age group (age between 30 to 80) in Sivaganga district, Tamilnadu. The survey included questionnaire for demographic information general, age, education and occupation, causes, family history, body mass index, risk factors, types of medication used, alternative treatment practices, reason for using alternative treatment practices. Glucose test was done using Glucometer (SD check gold) was used to detect the blood glucose level. The data was analyzed using SPPS version 19.0 software.

3. RESULTS

A total of 539 adult were interviewed, 263 were male (139 diabetics, 124 non-diabetics) and 276 were female (145 diabetics, 131 non-diabetics) (Fig. 1). Among the 539 population, 284 diabetics adults, 255 non diabetics adults, out of 539 populations 185 were age group 30-49, 187 age group 50-69 and 167 age group 70-80 respectively. Concerning 42.67% of the respondents were illiterates. 42.48% of them matriculate and 14.84% of them graduate. Among diabetic, 53% of adults screened had hyperglycemia. The demographic characteristics of the respondents are listed in Table 1.

Table 1: Socio-demographic profile of Sivaganga district population

Socio-demographic profile	Diabetics (*n* =284)		Non-diabetics (*n* =255)		Total (*n* =539)	
	No	%	No	%	No	%
Age distribution						
30-49	101	35.56	84	32.94	185	34.32%
50-69	95	33.45	92	36.07	187	34.69
70 -80	88	30.98	79	30.98	167	30.98
General						
Female	145	51.05	131	51.37	276	51.20
Male	139	48.94	124	48.62	263	48.79
Educational status						
Illiterate	129	45.42	101	39.60	230	42.67
Matriculate	130	45.77	99	38.82	229	42.48
Graduate	25	8.80	55	21.56	80	14.84
Occupational status						
House maker	117	41.19	106	41.56	223	41.37
Professional	22	7.74	35	13.72	57	10.57
Unskilled	52	18.30	42	16.47	94	17.43
Skilled	93	32.74	72	28.23	165	30.61
Body mass index						
Below 25 (Normal)	150	52.81	174	68.23	324	60.11
25-30 (overweight)	94	33.09	71	27.84	165	30.61
30-40 (obese)	38	13.38	9	3.52	47	8.71
40 and above	2	0.74	1	0.39	3	0.55

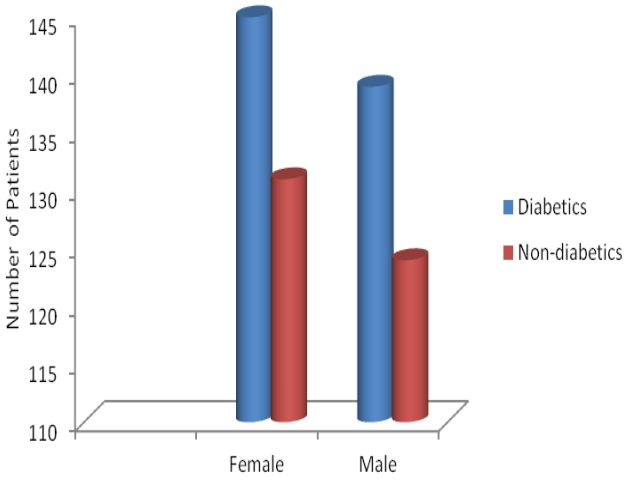

Fig. 1: Male and female of diabetics and non diabetics examine among Sivaganga district population

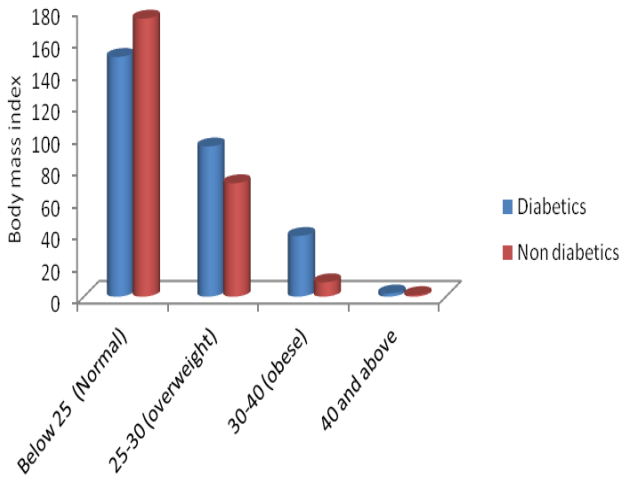

Fig. 2: Body mass index among the population in Sivaganga district

Table: 2 Knowledge of diabetes complication among Sivaganga district population

Complication	Diabetics (*n* =284)		Non-diabetics (*n* =255)		Total (*n* =539)	
	N	%	N	%	N	%
High cholesterol	87	30.63	20	7.84	107	19.85
High pressure	79	27.81	15	5.88	94	17.43
Kidney	64	22.53	21	8.23	85	15.76
Heart	71	25.00	18	7.05	89	16.51
Lunge	15	5.28	5	1.96	20	3.71
Nerve	84	29.57	8	3.13	92	17.06
Arthritic	68	23.94	19	7.45	87	16.14
Stroke	43	15.14	15	5.88	58	10.76
Angina	49	17.25	6	2.35	55	10.20
Eye	117	41.19	25	9.80	142	23.64
Itching skin	12	4.22	4	1.56	16	2.96
Dental	68	23.94	27	10.58	95	17.62
Deafness	9	3.16	1	0.39	10	1.85
Thyroid	48	16.90	16	6.27	64	11.87
Don't know	18	6.33	189	74.11	207	38.40

Fig. 2 showed that, 174 non diabetics adults and 150 diabetes adults were aware about the ideal body weight. 38 diabetics adults and 9 non diabetes adults were obese. Among all, 60.11% adults were aware about the ideal body weight. Fig. 3 showed that,124 diabetics adults and 75 non diabetics adults were aware causes of hereditary, 38 diabetics adults and 25 non diabetics adults were aware causes of obesity, 8 diabetics adults and 6 non diabetics adults were aware causes of other factors, 114 diabetics adults and 149 non diabetic adults were unaware causes of diabetes. 60% of adults were aware of the cause for diabetes. Even among diabetics, 40.14% adults, non diabetics adults 58.43% were unaware of the cause of diabetes.

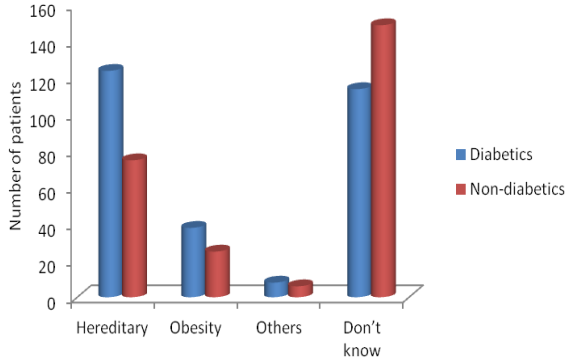

Fig. 3: Professed caused of diabetes among Sivaganga district population

Majority of adults (74.11%) were unaware about the increased risk of diabetic complication. Diabetes adults, 30.63% were aware for high cholesterol, 27.81% were aware of high blood pressure, 22.53% were aware of nephropathy, 25% were aware for cardio problem, mainstream of adult 41.19% were aware for retinopathy problem. 29.57% were aware for neuropathy problem. 5.28% were aware for lunge problem, 23.94% were aware for arthritic, 15.14% were aware for stroke, 17.25% were aware for angina, 4.22% were aware for itching, 23.94% were aware for dental problem, 3.16% were aware deafness, 16.90% were aware for thyroid (Table 2).

Universally 38.38% were aware about the diet management for diabetes due to fast recovery. Fig .4 showed that alternative treatment practices, while 135 diabetics (47.53%) adult know about the beneficial effects of daily exercise, 65 diabetic adults (22.88%) were aware spiritual practice, 35 diabetics adults were aware (12.32%) yoga, 39 diabetic adults (13.73%) were aware medication, 60 diabetic adults were aware herbal medicine (21.12%), 15 diabetic adult were aware acupuncture (5.28%), but 148 diabetics adults (52.11%) did not know about alternative treatment practices for diabetes management. 198 non diabetics adults (77.64%) did not know about alternative treatment practices for diabetes management. .

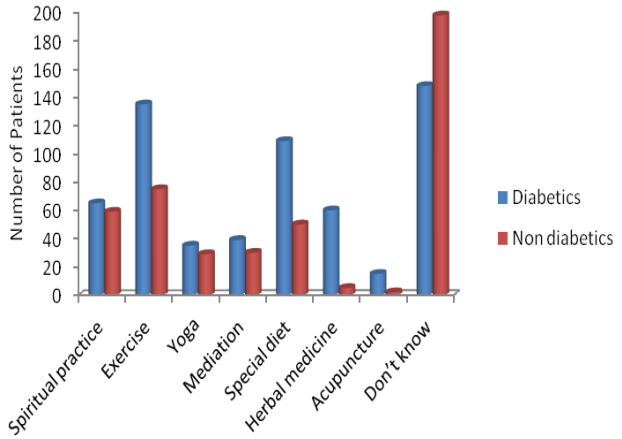

Fig. 4: Awareness on alternative treatment practices for diabetes among the population

Many people are now turning to holistic approaches; often when suffer from diabetes that has not been effectively treated by allopathic. Besides, the most important reasons for using alternative treatment practices were the search for better result (7.04%), less side effects (58.09), holistic approach (34.50%), conventional medicine did not support effectively (31.33%) (Fig. 5).

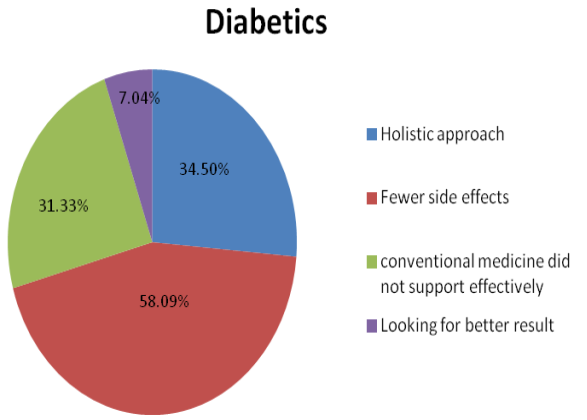

Figure: 5 Reason for using alternative treatment practices

Among those who did not use alternative treatment practices their primary reason were that it is unbelievable (31.69%), lack of time (47.53%), lack of scientific evidence (49.64%), no need (14.43%) (Table: 3).

Table: 3 Reason for not using alternative treatment practices

Reason	Diabetics (n = 284)	
	N	%
Lack of time	135	47.53
Lack of scientific research	141	49.64
Unbelievable	90	31.69
No need	41	14.43

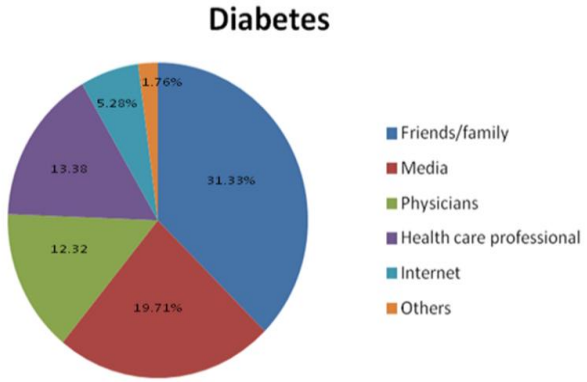

Fig. 6: Information source from alternative treatment practices

Fig. 6 showed that, Information sources of alternative treatment practices were aware 31.33% from friends/family. 19.71% were aware from media. 12.31% were aware from physicians. 13.38% were aware from health care professional. 5.28% were aware from internet. 1.76% was aware from other sources.

4. DISCUSSION

Diabetes mellitus is a common problem affecting 200 million people worldwide, causing 32 million deaths yearly [6]. Ten countries estimated to have the uppermost numbers of people with diabetes in 2000 and 2030 [5]. The largest increase in the prevalence of diabetes was found in India, China and other developing countries. Recent studies report that diabetes now affects a staggering 10-16% of urban population and 5-8% of rural population in India [7, 8]. There is very few data on the prevalence and awareness about diabetes in developing countries like India [9, 10]. An understanding of the status of public awareness is helpful for health educators to plan for future programmes. The most important verdict in this study was the lack of awareness of diabetes in Sivaganga district population. Only 55% of the participants were reported as having awareness about the condition called diabetes. But overall 74.11% of the adults were unaware of type II diabetes. Majority of the patients were unaware of the family history of type II diabetes and its complication. The survey report of the present study showed less significance in the awareness of type II diabetes among the population of Sivaganga district. Previous studies in South Indian population showed that 24.5% and 75.5% of the people are unaware of diabetes in Chennai and Kolar respectively [10, 11]. This risk difference may be due to variance in life style of the population. Knowledge about risk complication of diabetes was even poorer, only 25.89% of non diabetes and 76% of diabetes were aware of the complication and observed that even among diabetics population, knowledge about diabetes including awareness of complication on diabetes was poor [10, 11]. Hence this indicated that majority of the adults have not been openly taught about diabetes and its complications by their physicians. The 62.1% adults were consuming tablets and maintaining proper diet for fast recovery [12]. Public awareness study in Singapore observed low scores in general knowledge, risk factors of diabetes but had a good understanding of symptoms and complication of diabetes [13]. The above research findings are similar to our study. Alternative treatment practices used as a valuable medicine however awareness and belief of the effectiveness was lacking. Several alternative treatments are promising for type II diabetes treatment, but further rigorous study is needed in order to establish safety, efficacy, and mechanism of action [14-17].

In our study 48% of adults with type II diabetics in sivaganga district were likely to use alternative treatment practices to manage their illness. 52.11% of diabetes and 77.64% of non diabetes were unaware of alternative treatment practice. In addition, the main reasons for using alternative treatment practices were the search for better result, less side

effects, holistic approach, conventional medicine did not support effectively. Among those who did not use alternative treatment practices their primary reason were that it was unbelievable, lack of time, lack of scientific research. Hence, researches should be alters to focus on alternative treatment practices will be the helpful way to suggest safer treatment to type II diabetes. Awareness about alternative treatment practices of type II diabetes in Sivaganga district was low. Hence improving alternative treatment practices education for patients and healthcare professionals is imperative for the effective patients care in the management of type II diabetes mellitus. Conclusion of this present study, Sivaganga district adults would have a significant suggestion for future public education programme. Health care professionals may be additional proactive in disseminates health information about diabetes to the public. Over all, the result of the study indicates, it is essential that the health managers and authorities to take proper steps to increase the awareness among the population regarding causes, symptoms, alternative treatment practices and management of type II diabetes and its complication in order to build our community healthier and prosperous.

Conflicts of interest

We declare that we have no conflicts of interest

5. ACKNOWLEDGEMENTS

We would like to thank Dr. M. Manivannan (Diabetologist), Dr. P.L.Saravanan (General physician), Dr. Subbiah (Diabetologist), Sivaganga district, Tamil Nadu.

6. REFERENCES

1. Gupta V, Khadgawat R, Saraswathy KN, Sachdeva MP, Kalla AK. *Intern Jour Hum Genet*, 2008; **8**: 199-215.
2. King H, Aubert RE, Herman HW. *Diabe Care*, 1998; **21**: 1414-1431.
3. American Diabetes Association. *Diabe Care,* 2009; **32**: 13-61.
4. Rolo AP, Palmeira CM. *Toxicol Appl Pharma*, 2006; **212**: 167-178.
5. Wild S, Roglic G, Green A, Sicree R, King H. *Diabe Care*, 2004; **27**: 1047-53.
6. World Health Organisation and International Diabetes Federation, WHO Press; Geneva: Switzerland; 2006.
7. Somannavar S, Lanthorn H, Pradeepa R, Narayanan V, Rema M, Mohan V. *Jour of Associ of Physi of Ind*, 2008; **56**: 429–435.
8. Pradeepa R, Mohan V. *India Jour Med Res*, 2002; **116**: 32.
9. Murugesan N, Snehalatha C, shobhana R, Roglic G, Ramachandran A. *Diabe Res Clin Pract*, 2007; **77**: 433-437.
10. Mohan D, Raj D, Shanthirani CS, Datta M, Unwin NC, et al. *Jour Assoc Physi Ind*, 2005; **53**: 283-7.
11. Muninarayana C, Balachandra G, Hiremath G, Anil NS. *Intern Jour Dev Ctries*, 2010; **30**: 18-21.
12. Murugesh S, Mani D. *Jour Chem Pharm Res*, 2011; **3**(4): 684-696.
13. Wee HL, Ho HK, Li SC. *Singap medic Jour*, 2002; **43**(3): 128-134.
14. Annie chang H, Wallis M, Tiralongo E. *Evida bas complem altern medi*, 2011; 1-8.
15. Egede J, Donnan P, Zheng D. *Diabe care*, 2002; **25**: 324-329.
16. Dunning T, Manias E. *Aust Jour Adv Nurs*, 2005; **23**(1): 7-14.
17. Prabhu NM, Vaseeharan B, Manikandan R, Devi K. *Invent Rapi: Diabet*, 2012; 1.