Original Research Article

A clinico-epidemiological profile of diabetic and hypertensive patients in the suburbs of Chennai

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Abstract

Non-communicable disease has been recognized in the third Sustainable Development Goal with implication to reduce premature mortality due to Non-communicable disease. The World Health Report 2002 identified hypertension, or high blood pressure, as the third ranked factor for disability-adjusted life years. Diabetes mellitus is a rapidly emerging public health concern across the world and increasingly been diagnosed in the developing countries. It is a complex disorder that demonstrates the need for therapeutic life-style modification and self-care management to achieve good control. **Objectives:** This study was planned to assess the clinico-epidemiologcal profile, the health care seeking behavior and adherence to life style modification of the diabetic and hypertensive patients. **Results:** Clinical symptoms like excessive urination during night time and pain or burning sensation during urination was presented more among men and heavy periods, spotting, pain or discharge, menstrual tension, pain, bloating, irritability, or other symptoms at or around time of periods found among most female subjects. 54.2% of the subjects did not practice any form of exercise, 33.4% of the subjects incorporated mild exercise, 3.8% of the subjects occasionally did vigorous exercise and 8.6% of the subjects did regular vigorous exercise in their daily life. Only 33.8% of study subjects maintained physician prescribed diet. 46% and 43.2% of the subjects were having habit of alcohol consumption and tobacco usage. 59% of the participants did not adhere to the drug regimen advised by their physicians. **Conclusion:** Awareness regarding hazards of non-communicable diseases should be created. Physicians should spend more time in explaining the recommended lifestyle modifications to patients in detail. Each lifestyle modifications should be explained with its importance in control of disease. Health education regarding the risks and complications of hypertension was very low among the participants, which was associated with the non-adherence to lifestyle modifications.

Key Word: Hypertension, Type II diabetes, Life style modification, Clinical symptoms.

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INTRODUCTION

A large proportion of deaths and disability around the world is accounted by cardiovascular disease and has become a barrier to sustainable human development. Cardiovascular disease accounts for approximately 17.7 million of death per year worldwide. More than 75% of cardiovascular disease deaths occur in low and middle-income countries. One in 3 deaths globally are due to cardiovascular disease. Annual mortality due to cardiovascular disease is estimated to increase from 17.5 million deaths in 2012 to 22.2 million deaths in 2030. Non-communicable disease has been recognized in the third Sustainable Development Goal with implication to reduce premature mortality due to Non-communicable disease.[1] Approximately 20% of the adult population is suffering from hypertension globally. 60% of who are accounted to be living with the complications of hypertension. By 2025, it is projected that 29% of the world's population will have

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hypertension. High blood pressure is ranked as the third most attributable risk factor for burden of disease in South Asia.[2] In India; a recent study has shown that the prevalence of hypertension is 25% in urban adults and 10-15% among rural adults. Hypertension accounts as attributable risk factor for 17.9% and 34.6% of population for coronary artery disease and stroke respectively.[3] However, only about 25.6% of treated patients had their BP under control in a multicenter study from India with awareness on treatment and knowledge of adequacy of control.[4] Hypertension is a silent killer and has raised the global burden of disease. Hypertension is asymptomatic until medical complications occur. It is one of the public health challenges of the 21st century. According to the report of 2008, approximately 40% of adults who are aged above 25 have been diagnosed with hypertension. The prevalence rate has increased over time from 600 million in 1980 to 1 billion in 2008.[1] Hypertension is a modifiable risk factor for the cardiovascular disease. The growing prevalence of hypertension is credited to population growth, increased life expectancy and behavioral risk factors like unhealthy diet, excessive consumption of salt, excessive consumption of smoking and alcohol, lack of physical activity, excess weight and chronic stress.[1]Diabetes mellitus is a rapidly emerging public health concern across the world and increasingly been diagnosed in the developing countries. It is a complex disorder that demonstrates the need for therapeutic life-style modification and self-care management to achieve good control. To optimize patients' health, constant attention is required to diet, glucose monitoring, regular physical activity, foot care and medication.[5, 6] Although life-style modification can reduce diabetes-related morbidity and mortality, the extent of the management benefits is limited due to nonadherence.[7] Non-adherence to life-style modification recommendations can be defined as it happens when patient deviates partially or completely from the mutually agreed collaborative approach to behavior/life-style changes that are known to improve health status.[6] Several studies have shown the benefit of healthy dietary habits and regular exercise in the prevention and management of Type 2 diabetes mellitus.[8, 9, 10, 11] Adherence to prescribed lifestyle changes have also been shown to improve glucose levels, to lead to decreased blood pressure and to correct lipid abnormalities which are factors associated with the micro and macro-vascular complications of diabetes.[12, 13] This study is planned to assess the clinico-epidemiologcal profile of the diabetic and hypertensive patients and to access the health care seeking behavior of these patients.

MATERIALS AND METHODS

A cross sectional study was designed to meet the objectives and it was conducted from April 2015 to December 2016. The study setting was an urban health center in Kanchipuram district, Tamil Nadu. Individuals with clinical signs and symptoms of diabetes and hypertension were included in the study. The participants were briefed about the objectives of the study and data collected after obtaining a written informed consent. Sample size for the study was estimated as 500 based on the prevalence pattern from previous studies. The data collection tool used for the study was a pre- tested and self-administered questionnaire. Anthropometric measurements were noted. Standardized investigation techniques were used to diagnose diabetes and hypertension. The data collected by the principal investigator were cross-checked by co-investigator to ensure validity and completeness of the data. Data analysis for the study was done using statistical software STATA 10. Ethical clearance for the study was obtained from Ethics committee before the commencement of the study. A written informed consent of the participants was obtained and all information of the participants was kept confidential and their identity was not made public.

RESULTS

The study comprised of 312 (62.4%) male and 188 (37.6%) female subjects. 28 % of the study population were illiterate. Table 1 shows the health habits and personal safety among the subjects enrolled in the study. 54.2% of the subjects did not practice any form of exercise, 33.4% of the subjects did mild exercise, 3.8% of the subjects occasionally did vigorous exercise and 8.6% of the subjects did regular vigorous exercise. Only 33.8% of the subjects maintained the physician prescribed diet. 46% and 43.2% of the subjects were had habits of alcohol consumption and tobacco usage. Among subjects who had habits of alcohol consumption 23% of the subjects drank 5 drinks per week and 15% of the subjects considered abstaining from alcohol consumption. Among subjects with habit of tobacco consumption 70% of subjects smoked one packet per day. 5.4% of the study participants were living alone. 24.8% of the subjects had history of frequent falls and 43% of the study subjects had vision and hearing loss. 50.4% of the subjects recruited were obese followed by 27.8% overweight, 13.4% normal weight and 8.4% of them were underweight. Among the subjects 21.2 % of them had only hypertension, 25.4% had only diabetes and 53.4% of the subjects had both diabetes and hypertension.

Table 1: Descriptive profile of the subjects enrolled on the study

Categories		Frequency	Percentage
Exercise	No exercise	271	54.2
	Mild exercise	167	33.4
	Occasional vigorous exercise	19	3.8
	Regular vigorous exercise	43	8.6
Maintaining physician prescribed diet		169	33.8
Consuming alcohol		230	46
Tobacco usage		216	43.2
Personal safety	Living alone	27	5.4
	Having frequent falls	124	24.8
	Vision or hearing loss	215	43
BMI	Normal	67	13.4
	Underweight	42	8.4
	Overweight	139	27.8
	Obese	252	50.4
Hypertension		106	21.2
Diabetes		127	25.4
Hypertension and Diabetes		267	53.4
Drug adherence	Good	205	41
	Partial	135	27
	Irregular	160	32

Table 2 describes the mental health status among the subjects. 77.4% of the subjects felt stress as a major problem. 65.6% of subjects felt depressed and 9.6% of the subjects panicked during stress. 57.6% had problems with eating or loss of appetite. 15.6% of subjects thought about seriously hurting themselves. 87.4% of subjects had trouble sleeping. Only 0.4% of the subjects made an attempt to get help from the counselor. 59% of the participants did not adhere to the drug regimen advised by their physicians.

Table.2: Mental health status among the subjects

Categories	Frequency	Percentage
Felt stress as a major problem	387	77.4
Felt depressed	328	65.6
Panicked during stress	48	9.6
Problems with eating or appetite	288	57.6
Attempted suicide	0	0
Seriously thought about hurting self	78	15.6
Trouble sleeping	437	87.4
Been to a counselor	2	0.4

Clinical signs and symptoms among subjects are shown in Table 3. Among male subjects 82.7% had excessive urination during night, 39.4% of the subjects experienced pain or burning during urination, 28.5% of the subjects complained of blood in urine, 37.8 % of the subjects complained of burning discharge from penis, 63.5% of the subjects had problems emptying the bladder completely and 67.9% of the subjects' force of urination were decreased. Among women, 84% experienced excessive bleeding during periods, irregular periods, spotting, pain or discharge. 59.6% of women had hot flashes or sweating at night. 87.8% of subjects had menstrual tension, pain, bloating, irritability, or other symptoms at or around time of periods. 42% complained of breast tenderness, lumps, or nipple discharge. 67% of the subjects had diabetes for past 5 years and among which 88% of the subjects' dosage increased from initial level. Only 34% of the subjects self check for blood sugar levels at home. 82% of the subjects had hypertension for past five years. 76% of the subjects fall under the category of overweight and obese.

Table.3: Clinical signs and symptoms among subjects recruited

Men (n=312)		
Categories	**Frequency**	**Percentage**
Usual urination during night	258	82.7
Pain or burning with urination	123	39.4
Blood in urine	89	28.5
Burning discharge from penis	118	37.8
Force of urination decreased	212	67.9

Problems emptying your bladder completely	198	63.5
Women (n=188)		
Categories	**Frequency**	**Percentage**
Heavy periods, irregularly, spotting, pain or discharge	158	84.0
Hot flashes or sweating at night	112	59.6
Menstrual tension, pain, bloating, irritability, or other symptoms at or around time of periods	165	87.8
Experienced recent breast tenderness, lumps, or nipple discharge	79	42.0

DISCUSSION

A large proportion of deaths and disability around the world is accounted by cardiovascular disease and has become a barrier to sustainable human development. In present study 312 (62.4%) were male and 188 (37.6%) were female subjects. According to study conducted by S Ross *et al*[14] the gender distribution was 247 (48%) female participants and 267 (52%) male participants. In this study 230 (46%) were alcoholic, and are considered in the group of participants that do not adhere to the life style modification advice given to them. 43.2% of participants were smokers and did not adhere to lifestyle modification advice they received in regards to smoking. 45.8 % of subjects reported that they exercise. Tibue *et al* [15] reported 23.8% of the study population were alcoholic and 74.8% of the participants were adherent to lifestyle modification in regard to alcohol intake. 14.1% of participants were smokers. Adherence to exercise was noted in 65.1% of the participants.

CONCLUSION

The rate of non-adherence to behaviors and exercise recommendations is far more prevalent amongst studied population. Clinical symptoms like usual urination during night time and pain or burning with urination was found among more men and heavy periods, spotting, pain or discharge, menstrual tension, pain, bloating, irritability, or other symptoms at or around time of periods found among most female subjects. Awareness regarding the hypertension should be created. Physicians should spend more time in explaining the recommended lifestyle modifications to patients in detail. Each lifestyle modifications should be explained with its importance in control of disease. Health education regarding the risks and complications of hypertension was very low among the participants, which associated with the non-adherence to lifestyle modifications.

REFERENCES

1. World Health Organization. A global brief on Hypertension - World Health Day 2013. World Heal Organ. 2013;1–40
2. Heneghan C, Perera R, Mant D, Glasziou P. Hypertension guideline recommendations in general practice: Awareness, agreement, adoption, and adherence. Br J Gen Pract. 2007;57(545):948–52.
3. Gupta R. Trends in hypertension epidemiology in India. J Hum Hypertens. 2004;18(2):73–8.
4. Group HS. Prevalence, awareness, treatment and control of hypertension among the elderly in Bangladesh and India: a multicentre study. Bull World Health Organ [Internet]. 2001;79(6):490–500. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2566443andtool=pmcentrezandrendertype=abstract.
5. Hankó B, Kázmér M, Kumli P, Hrágyel Z, Samu A, Vincze Z, *et al*. Self-reported medication and lifestyle adherence in Hungarian patients with Type 2 diabetes. Pharm World Sci 2007; 29: 58-66.
6. World Health Organization. Report on Adherence to Longterm Therapies. Geneva: World Health Org; 2003.
7. Rubin RR. Adherence to pharmacologic therapy in patients with type 2 diabetes mellitus. Am J Med 2005;118 Suppl 5A:27S-34
8. Knowler WC, Barrett-Connor E, Fowler SF, *et al*. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Eng J Med. 2002; 346: 393– 403.
9. The Diabetes Prevention Program (DPP) Research Group. The Diabetes Prevention Program (DPP): Description of lifestyle intervention. Diabetes Care 2002;25:2165–2171. http://dx.doi.org/10.2337/diacare.25.12.2165, PMid:12453955, PMCid:1282458
10. Harris SB, Petrella RJ, Leadbetter W. Lifestyle interventions for type 2 diabetesrelevance for clinical practice. Can Fam Physician. 2003; 49: 1618–1625. PMid:14708927, PMCid:2214163
11. Wadden TA, West SD, Delahanty LM, *et al*. The Look AHEAD Study: A descriptive of the lifestyle intervention and the evidence supporting it. Int J Obesity.2006;14:737–752.
12. US Department of Health and Human Services. The effects of physical activity on health and disease. Physical activity and health: A report of the surgeon general. Atlanta, Ga: US Dept. of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease and Health Promotion; 1996:85–172.
13. Boule N, Haddad E, Kenny G, *et al*. Effects of exercise on glycaemic control and body mass in type 2 diabetes mellitus: a meta-analysis of controlled clinical trials. JAMA 2001;286: 1218–1227. http://dx.doi.org/10.1001/jama.286.10.1218, PMid:11559268

14. Ross S, Walker A, MacLeod MJ. Patient compliance in hypertension: Role of illness perceptions and treatment beliefs. J Hum Hypertens. 2004;18(9):607–13.
15. Tibebu A, Mengistu D, Negesa L. Adherence to recommended lifestyle modifications and factors associated for hypertensive patients attending chronic follow-up units of selected public hospitals in Addis Ababa, Ethiopia. Patient Prefer Adherence. 2017; 11: 323–30.

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