

**ANALYSIS OF NON-COMMUNICABLE DISEASE BURDEN IN A TERTIARY CARE HOSPITAL**D. Nehru<sup>1</sup>, C. Paranthakan<sup>2</sup>, V. P. Kannan<sup>3</sup><sup>1</sup>Professor, Department of Medicine, Thanjavur Medical College, Thanjavur, Tamilnadu.<sup>2</sup>Associate Professor, Department of Medicine, Thanjavur Medical College, Thanjavur, Tamilnadu.<sup>3</sup>Associate Professor, Department of Medicine, Thanjavur Medical College, Thanjavur, Tamilnadu.**ABSTRACT****BACKGROUND**

Non-communicable diseases(NCD), also known as chronic diseases are not detected early since they remain asymptomatic in the initial stage. On communicable disease screening, OP services are started in government healthcare setup. Objective of this study is to find out the magnitude of NCDs in the outpatient screening programme.

**MATERIALS AND METHODS**

The secondary data was collected from records available in NCD screening OP for a period of 4 years in Thanjavur Medical College Hospital. The data of nearly 55,207 patients screened in the NCD OP was analysed. The burden of the diseases to the healthcare setup and the risk these patients are likely to get in future were discussed in this study.

**RESULTS**

Out of 55,207 outpatients attending the NCD OP male patient's outnumbered female patients. 6,642 new patients with hypertension were detected in 4 years. 1608 new diabetics were detected and referred to medicine department for imitating treatment. 10,796 patients had both diabetes and hypertension. During this study period, 788 FNAC has been done for cancer breast detection, 82 patients were referred for biopsy. 14 cases of new cancer breast were detected during the study period. Doubtful cases were subjected to mammogram and ultrasound breast. 107 cases were referred for mammogram and ultrasound breast. Among them, four new cases of cancer breast has been detected.

**CONCLUSION**

Most of the non-communicable diseases are not detected early, which leads to catastrophic complications like strokes, renal failure, cardiac failure, etc. Early detection by NCD screening programme can definitely pickup these cases and proper treatment can be started in time to avoid morbidity and mortality.

**KEYWORDS**

Non-Communicable Disease, Diabetes Mellitus, Hypertension.

**HOW TO CITE THIS ARTICLE:** Nehru D, Paranthakan C, Kannan VP. Analysis of non-communicable disease burden in a tertiary care Hospital. J. Evid. Based Med. Healthc. 2017; 4(35), 2128-2131. DOI: 10.18410/jebmh/2017/414

**BACKGROUND**

Non-communicable diseases are not transmitted from person to person; the main NCDs are diabetes, hypertension, COPD, obesity, bronchial asthma and cancer. They are not caused by infective agents and are now the leading cause of death globally. They are present in the individuals for a long duration and the patient's report to the hospital only after developing a complication.

NCD's share some common risk factors like alcohol use, tobacco use, physical inactivity and unhealthy diets. Roughly, 80% of deaths occur in low-to-middle income countries and 20% in high income countries. All age groups and all regions are affected by NCD. NCD's were once

considered to be a problem of high income countries. But now, as analysed, it is seen in low income countries also. To combat, NCD's early detection and treatment will have an impact in the economy of the nation and prevent complications.<sup>1</sup>

The government of Tamil Nadu has started non-communicable screening programme in all primary, secondary and tertiary care institutions. Detection of these silent diseases in the early stage will give us an idea of the real burden and gear up the responsibilities of healthcare providers to start early treatment. This will reduce the target organ damage and pave the road for healthy living. In Urban population, there is awareness among the public to subject themselves to yearly screening for non-communicable diseases.<sup>2</sup>

Corporate setup also provides comprehensive master health checkup schemes, which are utilised by affordable people. The rural public do not come for voluntary screening because of their preoccupation with daily routine and land in government healthcare hospitals in advanced stage of the diseases. Hence, this NCD screening project launched by the government definitely detects these silent killers very early

*Financial or Other, Competing Interest: None.  
Submission 15-03-2017, Peer Review 22-03-2017,  
Acceptance 18-04-2017, Published 29-04-2017.*

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DOI: 10.18410/jebmh/2017/414*



and definitely in the long run it will reduce the incidence of myocardial infarction, stroke, renal failure, etc. if successfully carried out with adequate manpower.<sup>3</sup>

NCDs result is rapid death. Other NCDs, which deserves attention are osteoporosis, Alzheimer’s disease, chronic kidney disease, cataracts, etc., Sometimes, they are referred to as synonymous with ‘chronic disease.’ Some of the chronic diseases require chronic case management.<sup>4</sup>

NCDs are the leading cause of death globally. In 2012, they caused 68% of all deaths compared to the 60% in 2000. About half were under seventy years of age and half were women.<sup>5</sup>

Risk factors are lifestyle and environment as well as person’s background. Every year, at least 5 million people die because of tobacco use, 2.8 million die from being overweight and 7.5 million die because of high blood pressure. These diseases affect economically productive individuals.

All these NCDs also referred as top killer claim 8.5 million lives each year. NCDs disproportionately affect the poor, impoverish families and place a growing burden in the healthcare system.

Cost-effective intervention are available to prevent and control non-communicable disease and their risk factors. Epidemics of NCD are mainly attributed to modernisation, urbanisation and longevity.

**MATERIALS AND METHODS**

**Study Design-** Descriptive study.

**Study Area-** NCD OP at Thanjavur Medical College Hospital. All the patients above 30 years and age who attend the medical OP for minor ailments treatment are directed to the NCD OP nearby the Medical OP with requisition. The NCD OP has trained staff nurses who record height, weight, BMI, blood pressure, random blood sugar, blood cholesterol, blood urea, creatinine and female patients are examined for lump in the breast. If lump is detected, they are subjected to FNAC and directed to attend surgical OPD with the cytology report. Female patients above 30 years of age are advised to attend Obstetrics and Gynaecology Department for cancer cervix screening.

**Study Period-** January 2012 to December 2015.

**Sampling-** Purposive sampling technique is used for selection of desired samples according to inclusion criteria.

**Inclusion Criteria**

All adults above 30 years of age attending the medical OPD for minor ailments were included in the NCD screening

programmed. Women are subjected after counselling them for detection of cancer breast and cancer cervix.

**Exclusion Criteria**

Those patients who are already detected and being treated for diabetes and hypertension were not sent to the NCD OP.

**Ethical Consideration**

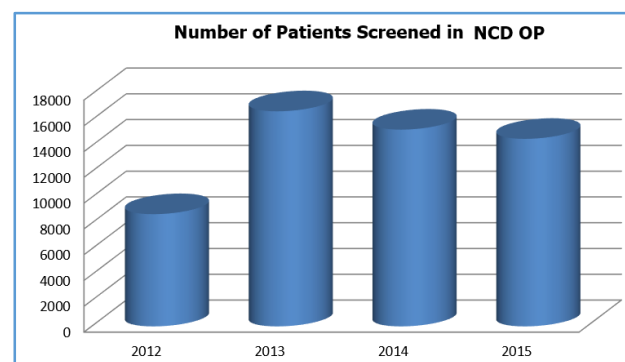
Before starting the study, the protocol of the study was submitted to the scientific committee of hospital. After getting due approval from the committee, the present study was initiated.

**Statistical Technique-** Microsoft Excel and IBM were used for data storage and analysis. The quantitative data were expressed in percentages.

**Type of Data-** The study was conducted with secondary data from the records available in non-communicable disease screening OP at Thanjavur Medical College Hospital. All patients above 30 years attending the Medical OPD have been screened. The data like sex, average new case and old case registration, new diabetes and hypertension cases detected, patients having both diabetes and hypertension were collected. The data were collected from 55,201 patients who were screened from January 2012 to December 2015 above 30 years of age.

Year	Number of Patients Screened in NCD OP
January to December 2012	8,707
January to December 2013	16,687
January to December 2014	15,264
January to December 2015	14549

*Table 1*



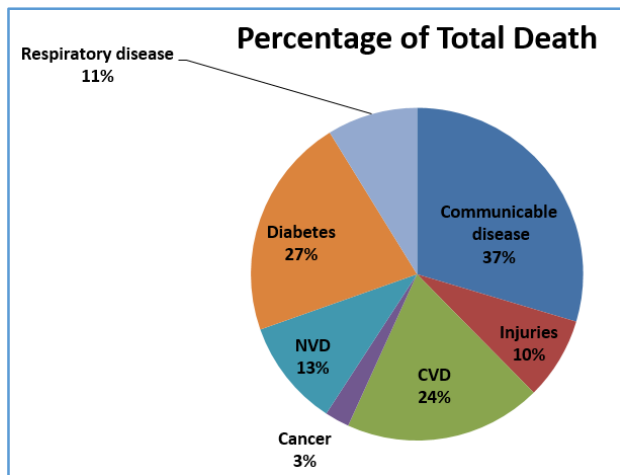
**Figure 1. Number of Patients Screened in NCD OP**

Year	Male		Female		Total
	Screened for Hypertension	Screened for Diabetes	Screened for Hypertension	Screened for Diabetes	
2012	2,380	807	5,530	1,888	10,605
2013	4,674	2,572	12,013	7,158	26,417
2014	4,326	3,444	8,880	8,630	25,280
2015	4,445	3,369	8,126	6,254	22,194

*Table 2*

Year	New Hypertension	Old Hypertension	New Diabetes	Old Diabetes
2012	1,002	2,639	137	1,029
2013	1,755	4,713	320	2,569
2014	1,801	1,794	480	1,030
2015	2,084	1,651	671	1,024
<b>Total</b>	<b>6,642</b>	<b>10,797</b>	<b>1,608</b>	<b>5,632</b>

**Table 3**



**Figure 2. Proportionate Mortality in India**

**DISCUSSION**

The present study has found male patients outnumber female patients in the screening NCD OP. 31% had hypertension (both old and new put together), 12% were new hypertensive. 13% had diabetes (both old and new), 2.9% were new diabetes, 19% had both diabetes and hypertension. FNAC based on suspicion in 788 patients revealed 1.7% of new cancer breast. From 107 cases referred for mammogram and USG breast 3.7% of new cases of cancer breast were made out.

**CONCLUSION**

Most of the non-communicable disease is not detected early, which leads to catastrophic complications like strokes, renal failure, cardiac failure, etc. Early detection by NCD screening programme can definitely pickup these cases and proper treatment can be started in time to avoid morbidity and mortality.

NCD screening OP is a very useful station in government institutions for detecting new cases of diabetes, hypertension and cancer. If all patients attending the other specialty departments are screened in the OP with additional staffs, then more numbers of cases can be picked up in NCD programme. Treatment can be started in time. This will reduce the morbidity and mortality due to stroke, cardiac failure and renal failure.

This study has included only outpatients attending the medical OPD due to scarcity of staff this screening programme has not included other department outpatients. If this programme is extended to include other department patients, the number of new cases of diabetes, hypertension, cancer cervix and breast will be more. The new cases detected among the inpatients are not included in this study, which is a drawback. In each tertiary care

hospital, separate statistics depicting these figures for outpatient and in patients in the computerised medical records department is mandatory. Based on the disease burden, additional staff nurses, lab technician, pharmacists, medical officers if sanctioned, this screening programme will be useful to the patient community.

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NCDs are the leading cause of death globally. In 2012, they caused 68% of all deaths compared to the 60% in 2000. About half were under seventy years of age and half were women.<sup>6</sup>

Risk factors are lifestyle and environment as well as person’s background. Every year, at least 5 million people die because of tobacco use, 2.8 million die from being overweight and 7.5 million die because of high blood pressure. These diseases affect economically productive individuals.

All these NCDs also referred as top killer claim 8.5 million lives each year.

NCDs disproportionately affect the poor, impoverish families and place a growing burden in the healthcare system. Cost-effective intervention are available to prevent and control non-communicable disease and their risk factors, epidemics of NCD are mainly attributed to modernisation, urbanisation and longevity. WHO has warned- if “business as usual continues” globally by 2030 annual mortality due to NCD may take a toll of 55 million deaths. NCDs have killed more Indian in 2015. 3.6 million deaths occurred due to NCD. It is double to that caused by communicable diseases. Hence, it is global burden and to be attended by all means.<sup>7</sup>

Coordinated action involving all sectors of society is required to compact NCD including partnership among government, civil society, private sector and international organizations.

Health education to avoid risk factors like avoid smoking, less salt intake and avoid air pollution will help to prevent NCDs. The non-modifiable risk factors include genetics, age and gender of a patient. Exercise for 30 minutes daily, eating food high in Lecithin is helpful. Lecithin is a protein substance that regulates were cell nutrients. It also helps to maintain ideal body weight and helps to burn excess fat.<sup>8</sup>

Foods rich in lecithin include soya beans, grains, legumes and peanut. Public should be advised to take food rich in antioxidants and cell flavonoids. These substances keep the brain healthy and prevent cancer and noncommunicable diseases. Foods such as cranberry dried prunes, plums and pinto beans will also be helpful. Doing yoga every day and training the brain daily will also help in the prevention of NCDs.<sup>9</sup>

In a tertiary care government hospital, this NCD screening programme for diabetes, hypertension, cancer cervix and breast picked up new cases, which have been in the early stage and silent. This programme can be expanded is a large scale with manpower and other logistics to include

screening of osteoporosis, cataracts, Alzheimer's disease, kidney disease, asthma, obesity, etc. Definitely, this study shows the success of the NCD programme in rural tertiary healthcare institution.

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