

A Descriptive Study on Burden of Risk Factors of Non Communicable Diseases Among Urban Population of Shivamogga, India

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Received on: 25.06.2019

Accepted on: 16.08.2019

How to cite this article:

Raghavendraswamy koppad, Kanchana Nagendra. A Descriptive Study on Burden of Risk Factors of Non Communicable Diseases Among Urban Population of Shivamogga, India. Indian J Prev Med. 2019;7(2):61-64.

Abstract

Background: Chronic non-communicable diseases (CNCDs) are the leading cause of death in the world. About 20% of deaths due to NCDs occur in developed countries, while about 80% of deaths occurring in low and middle income countries, where most of the world population lives. The incidence of NCDs are greater in urban areas when compare to rural areas in India. Physical inactivity being the risk factor is one of the most important determinant of health in urban India. **Objectives:** To assess the prevalence of physical inactivity in urban population of Shivamogga. **Methods:** A Cross-sectional, Descriptive, Community-based study conducted using multi-stage sampling method with households as sampling unit. Information on behavioral and biological risk factors was obtained through standardized methods as recommended by the Steps 1 and 2 survey guideline of the World Health Organization after modifying to suit the local requirement. **Results:** Total participants in the study were 2000, comprised of 1000 males' and 1000 females. Prevalence of physical inactivity was 30.4% (Male - 17.6%, Female - 43.3%). **Conclusions:** This community based study demonstrated high prevalence of obesity and overweight among the productive population of urban Shivamogga.

Keywords: Non-communicable diseases; Physical inactivity.

Introduction

Chronic non-communicable diseases (CNCDs) are the leading cause of death in the world.¹ Accounting for around 60% of all deaths and 44% of premature deaths worldwide.² About 20% of deaths due to NCDs occur in developed countries, while about 80% of deaths occurring in low and middle income countries, where most of the world population lives.¹ The incidence of NCDs are greater in urban areas when compare to rural areas in India.³ Physical inactivity being the risk factor is one of the most important determinant of health in urban India. Hence it is important to assess the burden

of disease risk factors in the community. Objective of this study is to assess the prevalence of Physical inactivity among urban population of Shivamogga.

Materials and Methods

An observational community based cross sectional study was conducted in Urban Shivamogga. Two wards were selected by simple random sampling method. Data was collected from house hold members aged 15-64 years, who are residents of study area. With 5% prevalence of NCD risk factors (according to previous

nationwide study), the calculated sample size is 1900, for our convenience we have made it 2000. There are around 429 households (with 4000 population) come under the study area, visiting every household in the area and information was collected from people between age group of 15–64 years. Among the collected data, 2000 (sample size) data was taken randomly and analyzed. After obtaining the written informed consent they were interviewed using a pre-structured and pretested questionnaire adopted from WHO STEPS I and II, approaches for non-communicable diseases risk factors surveillance, after modifying to suit the local requirements (questions about physical activity

were considered for study).⁴ Data was analyzed by excel spread sheet, results are documented in proportions and percentages with appropriate statistical tests.

Results

The prevalence of physical inactivity during work (job) was 66%. Inactivity was more among women (88.3%) compared to men (43.7%). About 30.2% of the subjects were moderately active during working time, while few of the subjects were involved in vigorous activity (3.8%). This gender

Table 1: Levels of Physical Activity at Work among Men & Women

Physical Activities	Men Number (%)	Women Number (%)	Total Number (%)
Sedentary	437 (43.7%)	883 (88.3%)	1320 (66%)
Moderate	497 (49.7%)	107 (10.7%)	604 (30.2%)
Vigorous	66 (6.6%)	10 (1%)	76 (3.8%)
Total	1000 (100%)	1000 (100%)	2000 (100%)

$\chi^2 = 443.7, p < 0.001$, Highly Significant

wise difference in different physical activities during working hours was found statistically highly significant ($p < 0.001$) (Table 1).

During leisure time, majority (84.5%) of the

study subjects were engaged in light activities, the sedentariness was more among women (90.8%) compared to men (78.2%). 14.5% of the subjects were moderately active during leisure time,

Table 2: Levels of Physical Activity during Leisure Time among Men & Women

Physical Activities	Men Number (%)	Women Number (%)	Total Number (%)
Sedentary	782 (78.2%)	908 (90.8%)	1690 (84.5%)
Moderate	198 (19.8%)	92 (9.2%)	290 (14.5%)
Vigorous	20 (2%)	0	20 (1%)
Total:	1000 (100%)	1000 (100%)	2000 (100%)

$\chi^2 = 68.1, p < 0.001$, Highly Significant

while only 1% were indulged in heavy activities. This difference observed was statistically highly significant ($p < 0.001$) (Table 2).

Almost 38.9% of the subjects were using motorized vehicles for travel, while 61.1% of the subjects had the habit of walking/cycling for short

distance. Transport related physical inactivity was more among females compared with men. This difference was found statistically highly significant ($p < 0.001$). 30.4% of the population was physically inactive in all domains of physical activities (work, leisure time and travel). Overall,

Table 3: Walking or Using Bicycle for transportation to work

Consumers	Yes Number (%)	No Number (%)	Total Number (%)
Men	687 (68.7%)	313 (31.3%)	1000 (100%)
Women	535 (53.5%)	465 (46.5%)	1000 (100%)
Total	1222 (61.1%)	778 (38.9%)	2000 (100%)

$\chi^2 = 48.6, p < 0.001$, Highly Significant

women (43.3%) were found to be more physically inactive compared with men 17.6% (Table 3).

Discussion

In the present study, 66% of the subjects performed sedentary activities during working hours; similarly, 38.9% used motorized vehicle for travel and 84.5% were sedentary at leisure time. This could be attributable to poor awareness and high use of paid labor by housewives and use of mechanized means in kitchen preparations by females, leading to sedentary life style. Similarly, in men also, higher use of motorized vehicles and mechanization at workplaces lead to inactivity. The prevalence of overall physical inactivity among the free living urban population, in the present study was found to be 30.4%. The result of the present study is comparable with figures (31–51%) given by the WHO, and findings are also in accordance with studies conducted by Sugathan TN *et al.* in Kerala and Nath *et al.*⁵⁻⁷ Studies conducted by Meenakshi BM *et al.*, Gupta R *et al.* reported much high prevalence (> 70%) of overall sedentary activities in urban population as compared to our study.^{8,9}

WHO guideline book titled Global Recommendations on Physical Activity for Health suggested as following with regards to physical activity. Children and youth aged 5–17 should accumulate at least 60 minutes of moderate- to vigorous intensity physical activity daily. Amounts of physical activity greater than 60 minutes provide additional health benefits. Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week.¹⁰

A study conducted by Anand K, Bela Shah and co-workers revealed that Women were more likely to be physically inactive compared with men (14.8% v. 55%). An increasing trend of physical inactivity with age was seen among men whereas among women, extremes of age reported maximum physical inactivity and the 35–44 years age group reported the least physical inactivity.¹¹

A cross sectional study conducted by Maimoona Aboobakur *et al.* in Male (Maldives), reported that, overall physical inactivity was 30.2%. The prevalence of leisure time and job related physical in-activities were 93.4% and 93.1% respectively.¹²

A study conducted by Mahajan DC, Birari SS *et al.* showed that, proportion of overall physical inactivity (job related, leisure time, travel related)

among focused urban population (police) was 14.6%.¹³

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