ASSESSMENT OF LIFESTYLE-RELATED RISK FACTORS CONTRIBUTING FOR CHRONIC NON COMMUNICABLE DISEASE IN PATIENTS VISITING RURAL TERTIARY CARE HOSPITAL

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ABSTRACT

Chronic Non-communicable diseases remain an area of high public health concern especially in developing countries where growing middle class and ever changing lifestyle have led to the rapid increase in the burden of non-communicable disease. The study aimed to assess various lifestyle and behavioral risk factors contributing for non-communicable chronic disease in patients visiting rural tertiary care hospital. A total of 152 patients were selected and analyzed in the study out of which 49 (32.22%) were female and 102 (67.78%) were male. The average age of the male patients were found to be 61.79years (SD±9.28) and females were 57.1years (SD±10.3). Majority of patients were from lower socioeconomic and educational status. Various risk factors contributing for chronic non-communicable disease that are identified in the study were advance age i.e. > 40years 142 (93.42%), genetically risk factor 46 (30.26%), poor income status 120 (78.95%), occupational exposure to dust, smoke and irritants 111 (73.03%), high body mass index (BMI)75 (49.34%), stress 110 (72.37%), inadequate sleep 5 (3.29%), smoking habit 69 (45.4%), Alcohol consuming habit 63 (41.48%), lack of physical activity 59 (38.81%), rare fruit consuming habit 72 (47.37%) and less vegetable consumption i.e. ≤ 1/day were 32 (21.05%). Study concluded that substantially high levels of the various lifestyle and behavioral related risk factors such as poor socioeconomic status, smoking, alcohol consumption, high BMI or obesity, stress etc, were significantly associated in patients with chronic disease.

Keywords: Chronic Non-communicable disease, life style, risk factors, income status, health seeking behavior.

INTRODUCTION

A chronic non-communicable disease (CNCDs) refers to non-infectious diseases or illnesses that are caused by something other than pathogens. The term is used to imply a variety of conditions including cancer, cardiovascular diseases, diabetes mellitus, chronic respiratory diseases, musculoskeletal disorders and other conditions[1]. Chronic disease has become the dominant health burden in many developing countries. Chronic diseases were responsible for 50% of the disease burden in 23 high-burden developing countries in 2005 and will cost those countries $84billion by 2015 if nothing is done to slow their growth. Recent figures released by WHO indicated that approximately 80% of the global CNCDs deaths occur in low-income and middle-income countries and only 20% of CNCDs occur in high-income countries. There is thus a widespread scientific and public health consensus that the likelihood of developing CNCDs is linked to the exposure of an individual, community or population to a cluster of behavioral risk factors, such as tobacco use, unhealthy diets and physical inactivity[2,3]. India is a developing country with a population of more than 1billion, is undergoing a rapid epidemiologic transition characterized by an increase in the prevalence of chronic diseases. In India, deaths due to chronic diseases were 3.78million in 1990 (40.4% of all deaths) and are expected to reach 7.63million in 2020 (66.7% of all deaths)[4]. Several studies conducted in India had shown an increase in the prevalence of many risk factors contributing for chronic diseases and strengthens needs of interventions to reduce the prevalence of these risk factors and to deal with the chronic diseases to which they contribute [5-7]. Chronic Non-communicable diseases remain an area of high public health concern as well as health services providers. The growing middle class and ever changing lifestyle in developing countries have led to the rapid increase in the burden of non-communicable diseases. This study focus in assessing the prevalence of risk factors and other determinants contributing for non-communicable chronic diseases among rural population visiting rural tertiary care hospital.

METHODOLOGY

The prospective cross sectional, observational and intervention based study was conducted at Sri Adichunchanagiri Hospital and Research Center, B.G. Nagara, Karnataka, India; which is 1050 bedded multispecialty tertiary care teaching hospital which provides primary and specialized health care to rural population visiting hospital in and around Nagamangala taluk, Karnataka, India. In this study, the modified questionnaires based on WHO; STEPS1 and STEP2, guidelines for surveillance of chronic diseases, were design as data collection forms. The questionnaires contain 16 structured closed ended questions. Questionnaires had components to capture demographic details such as name, sex, age, educational background, income as well as to assess the health related risk factors such as occupation, education, diet, living geographic area, along with this data past medical history, reason for admission, family history, co-morbidities and clinical data. Patients with hypertension, diabetes and other cardiovascular and respiratory disease undergoing treatment or visiting the hospital were taken for the study. Participant's weight and height were measured while they were without shoes and wearing light clothes, these heights and weight were used in measurements to calculate participants' body mass index (BMI- their weight in kilograms divided by their height in meters squared) and considered anyone with a BMI of 25 or higher to be overweight. Data was collected after being trained in basic interviewing techniques and standard methods of obtaining physical measurements. Before enrolling, the patient was explained regarding the study and consent taken from the patients. The data was analyzed using suitable statistical technique and result was presented on number, average and percentage.

RESULTS

A total of 152 patients were selected for the study, out of which 49 (32.22%) were females and 103 (67.78%) were males. The average age of the male patients were found to be 61.79years (SD±9.28) and female were 57.1years (SD±10.3). Out of 152 patients, 72 (47.37%) of patients were of age group above 60years, 70 (46.05%) were of age group between 40 to 60years and only 10 (6.58%) of them were between the age group of less than 40years. The majority of individual under study were farmers i.e. 100 (65.79%) and low income group people. only 32.24% patients were literate whereas 67.76% patients were illiterate with no formal education. Out of 49 literate patients 18 (36.73%) attended only primary school similarly 18 (36.73%) had high schooling whereas 26.5% were graduate. The socio-demographic details of patients are shown in Table 1 below.

Table 1: Socio-demographic details of the study subject

Details		Number (%) n= 152
Gender	Male	103 (67.78)
	female	49(32.22)
	Less than 40	10 (6.58)
Age (years)	40-60	70 (46.05)
	Above 60	72 (47.37)
Income	>5000	120(78.94)
	5,000-10,000	19 (12.5)
	11,000-20,000	7(4.6)
	>25,000	6 (3.95)
Literacy status	Illiterates	103 (67.76)
	literates	49 (32.24)

Among 152 patients, 69 (45.39%) of patients had one or more co morbidity. List of chronic disease in patients under study is shown in Table 2 below.

Table 2: List of non communicable chronic diseases along with co-morbidity in patients

Disease	Number (n=152)	%
COPD	25	16.45%
Asthma	6	3.94%
DM	26	17.10%
HTN	19	12.5%
IHD	4	2.63%
DM&HTN	40	26.31%
COPD & DM	4	2.63%
COPD& IHD	3	1.98%
DM & IHD	4	2.63%
HTN & IHD	3	1.98%
COPD&DM&HTN	3	1.98%
DM&HTN&IHD	11	7.24%
HTN&DM&IHD&COPD	1	0.65%
Stroke	3	1.98%

*COPD- Chronic obstructive pulmonary disease, DM- Diabetes mellitus, HTN- Hypertension, IHD- Ichemic heart disease

Risk factor contributing for various Chronic Non Communicable Diseases

Among 152 patients, Various risk factors contributing for chronic disease identified in the study were advance age i.e. > 40years 142 (93.42%), positive family history/genetically risk factor 46 (30.26%), poor income status 120 (78.95%), occupational exposure to dust, smoke and irritants 111 (73.03%), high body mass index (BMI) 75 (49.34%), stress 110 (72.37%), inadequate sleep 5 (3.29%), smoking habit 69 (45.4%) [All 69 smokers were male among which 39 (56.52%) consume more than 10 cigarettes/day, 22 (31.88%)

consume 6 to 8 cigarettes/day, 1 (1.45%) consume 3-5cigarettes/day and 7 (10.15%) were occasional smokers], Alcohol consuming habit 63(41.48%) [Among alcohol consumer, 42 (66.66%) were daily drinker, 7 (11.11%) drink twice a week and 14 (22.22%) were occasional drinker; all were male], lack of physical activity 59 (38.81%), rare fruit consuming habit 72 (47.37%) and less vegetable consumption i.e. ≤ 1/day were 32 (21.05%).

Table 3: Risk factor contributing for various chronic non communicable diseases

Risk factors	Number (out of 152)	%
High age i.e. >40	142	93.42%
Family history/ genetically risk	46	30.26%
Poor income	120	78.95%
Occupational exposure	111	73.03%
High BMI	75	49.34%
Stress	110	72.37%
Inadequate sleep	5	3.29%
Smoking	69	45.4%
Alcohol consumption	63	41.48%
Lack of physical activity	59	38.81%
Rare fruit consumption	72	47.37%
Less vegetable consumption	32	21.05%

DISCUSSION

The study revealed that the prevalence of chronic non-communicable disease were higher in male patients than in female patients. Most of the patients with chronic disease were in age group of greater than 60years showing the strong association between the higher age and prevalence of chronic disease. Majority of the patients were farmers and lower income group people. Furthermore, about 67.76% of the patients were illiterate with no formal education and schooling and 73.47% among the literates attained either only primary or high school education. The represented population may be expected to possess a higher risk factor mean score, thus adversely exposing them to the development of CNCDs. These findings clearly indicate that the disease prevalence is higher in patients with lower socio economic and educational status. This finding co-relates with study observed in some other countries[2,6,8]. The prevalence of smoking and alcohol consuming habit was observed in 45.4% and 41.48% of the total study subject. However, the prevalence was nil among the female subject in this study. These findings coincides with the study conducted in Kerala, India by Sugathan, *et al.*[6] which also cited that heavy alcohol consumption can adversely affect the neuralgic, cardiac, gastrointestinal, hematologic, immune, muscular-skeletal and psychiatric systems. Smoking is considered to be a major risk factor for chronic illnesses since it may be responsible for most of the lung cancer, the majority of chronic bronchitis, emphysema and a good portion of ischaemic heart diseases in men below 65yr of age. Significantly association was observed in Smoking and alcohol consumption habit and development of chronic diseases in males than in females in this study. Majority of patients were exposed to dust, smoke and irritants in their daily life as most patients were belonged to low income occupational group such unskilled workers, cook and farmers. The occupational exposure was found the most prevalent risk factor in patients for respiratory disease. The prevalence of positive family history was significant among the patients with chronic disease. Nearly half of the patients

had high body mass index (BMI) ≥ 25 reflecting as one of the major risk factor for development of chronic diseases. Obesity and overweight poses an independent risk factor for chronic diseases and premature mortality. Obesity is not only associated with an increased risk of developing hypertension but also with an increased risk of developing other non-communicable diseases, for example coronary heart disease, diabetes and stroke[9,10]. About 72.3% of patients reports of having stress. Stress is the known health related risk factor[11]. A chronically stressful life, social isolation, anxiety and depression increase the risk of heart disease and stroke. About 36.81% of patients perform no physical exercise or activities. Lack of physical exercise contributes significant risk factor for developing chronic disease. Physical activity programs can help to control weight and promote overall physical health in this population and therefore aid in the prevention of most of the chronic lifestyle diseases. Patients with a specific risk profile, for example where a metabolic syndrome has been identified, will benefit significantly from intensive diet and exercise programs as they will improve blood glucose levels, lipid profiles, hip-to-waist ratios and lower blood pressure[9]. The study also shows that significant number of patients consumes inadequate fruits and vegetables. The inadequate consumption of fruits, vegetables and inadequate physical activity or exercise is known to enhance disease propensity. Combinations of unhealthy behavioral risk factors are more predictive to describe the lifestyle determinants on chronic diseases and its mortality[12].

CONCLUSION

Substantially high levels of the various lifestyle and behavioral risk factors such as poor socioeconomic status, smoking, alcohol consumption, high BMI or obesity, stress etc., were significantly associated in patients with chronic disease. The development and implementation of relevant health promoting and intervention programs is therefore advised.

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