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THE PRE-DIABETIC CONDITION

Pharmacy

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ABSTRACT

Objective: The objective of this study was to elucidate the effects of regular exercise, smoking and consumption of alcohol on pre diabetic condition.
Methods: It is a prospective-observational study in the period of Six month in local society of barara in Ambala district, India. Among 1000 volunteers were included and ethical approval was also obtained; the study was followed inclusion and exclusion criteria's.
Results and Discussion: The highest numbers of male volunteers have seen in the smoking and alcohol consumption as compared to females and on the other hand female candidates were less aware towards exercise for health. In the estimation of sugar level Pre-Diabetes are present 37.1% subjects unknowingly and Diabetes in 6% subjects. Overweight are present in 29.5% subjects and Obesity in 10% subjects.
Conclusion: In our study the prevalence of pre-diabetic condition in normal volunteers were high and awarenes campaining is required and lifestyle modifications were suggested that effectively changes the numbers of volunteer towards the decreased.

KEYWORDS

INTRODUCTION

The non-communicable diseases (NCDs) represent one of the major health challenges to global development. Non-communicable diseases were estimated to have a bad contributed to almost 71% deaths in the world and among them about 85% occur in developing countries [1]. Non-communicable diseases (NCDs) are already of major importance in developed countries and are rapidly becoming a major public health threat in the developing world. These diseases constituted 43% of the global burden of disease in 1999. Based on present trends, by 2020 they will account for 73% of deaths and 60% of the disease burden in the developing countries like in India.

Spreading of common NCDs are increasing and most of these NCDs share common preventable risk factors. Major risk factor of today will be converting in the diseases of tomorrow [2-5].. Therefore measuring risk factors for NCDs is an attempt to predict the future dealing of NCDs in a population and is vital for promoting disease prevention and control programmes [6].

In 2008, 57 million deaths occurred globally were due to NCDs, which includes cardiovascular diseases, cancer, diabetes and chronic lung ailments. The disaster of these diseases is rising quickly among developing countries, about one fourth of deaths take place before the age of 60 [7].

1. Non-communicable Disease :

It is a non-infectious condition that cannot spread from individual to individual. It also last for long duration. Progression of the disease is slow. It is also called as chronic disease. A combination of environmental factors, physiological factor genetic factor, lifestyle, can cause these diseases[8].

1.1 Risk factors of non-communicable disease
a) Modifiable risks
b) Non-modifiable risks

Modifiable risks include:
*   Age
*   Family history

Non-modifiable risks include:
*   Unhealthy diets
*   Lack of physical activity
*   Smoking and secondhand smoke
*   Excessive use of alcohol
*   Stress

1.2 Most common non-communicable diseases :
Some diseases are more common than others. The four main types of non-communicable diseases are:-
*   Cardiovascular disease
*   Diabetes
*   Chronic Respiratory disease
*   Cancer

1.3 Diseases which included in study: Diabets
Diabetes:
Type 1 diabetes is characterized by a deficiency of insulin secretion and results from the autoimmune destruction of the insulin-producing beta-cells in the pancreas [9-10]. This type was formerly known as juvenile diabetes or insulin dependent diabetes mellitus, as it is usually diagnosed in children and young adults. Administration of insulin is essential, life –long and usually doesn't impair normal activities and function. Type 1 diabetes affects between 5% and 10% of diabetic cases [11].

Type 2 diabetes is characterized by hyperglycemia and insulin resistance, which may be combined with inadequate compensatory insulin secretion. Type 2 diabetes is the most prevalent form of diabetes, as it account for almost 90% of diabetic cases [11]. Excessive body weight and absence of physical exercise are the primary causes of this form of diabetes [12]. This type is initially managed by exercise and diet and if blood sugar levels remain high, treatment with medication such as metformin or insulin may be used [13].

The chronic high blood sugar of diabetes is related to long-term damage, dysfunction, and failure of various organs, commonly the kidney, nerves, eyes, heart, and blood vessels.

Acute, life-threatening complication of uncontrolled or untreated diabetes includes diabetic ketoacidosis and the non-ketotic hyperosmolar syndrome [14].

This survey is designed to estimate of non-communicable disease risk factor of all non-institutionalized individuals of both sexes of 30 years and above following World Health Organisation (WHO) stepwise surveillance. The main objective of the study are:-
1. To determine the distribution of risk factor such as tobacco use, alcohol consumption, physical in-activity, obesity, hypertension and diabetes mellitus.
2. To prepare a data on Non-communicable diseases risk factor for planning, prevention and control activity of Non-communicable disease in five villages of Haryana.

3. To promote healthy life style through health education about risk factor of non communicable disease.

RESEARCH METHODOLOGY
The NCD risk factor survey was designed to establish baseline information on the major risk factors for the action plan implemented within the integrated NCD prevention and control programme in India. Data were collected by using structured questionnaire from WHO STEPS system. Where check blood pressure and blood sugar and measure their height and weight and find body mass index of each volunteer. After that we provided the counselling to the volunteer. And after 2 months we take the follow up of all the volunteer.

2. RESULTS AND DISCUSSIONS
The survey includes data of 1000 subjects that participated in the study after following legal steps including signing the consent form that includes male subjects 555 and female subjects 445. The majority of candidates were from age group 50 years or above.

In our study, we found 639 volunteers (out of 1000) who never smoked or consumed any smokeless product such as Gutka or Khaini. There were 246 males and 393 females along with 183 subjects used to smoke irregularly; out of that 154 were males and 29 were females and 178 participants were found that do smoke or consume smokeless products daily; out of that 155 were males and 23 were females.

Table 1.1: Categorization of subjects according to smoking, alcohol consumption, waist circumference measurement, physical activity and family history.

Age Group	Smoking			Alcohol consumption		Waist circumference (cm)			Physical Activities Min/Wk		Family History	
	Never	Sometime	Daily	Never consume	consume	>90	90-100	>100	>150	<150	No	Yes
M	246	154	155	282	273	262	215	80	311	244	534	21
F	393	29	23	430	15	118	215	112	173	272	392	53
T	639	183	175	702	288	378	430	192	484	516	926	74

The data given in table 1.1 reveals that in survey of 1000 volunteers a large no of person consumes alcohol and is habitual of smoking along with these not doing physical activity that leads to the NCDs. The table 1.2 compares the data of pre- diabetic condition which is a becoming epdimeic in near future. At first survey 371 persons were having pre-diabetic symptos though they were not aware of this. The lack of knowledge is also the fatel to the society. The projact team counsel the volunteers for future NCDs and their harmfull effects on the human body. After a folloup period of two months we found the change in the data given in table 1.2. that reveals that after following the regular exersize and avoiding the smoking and alcohol consumption or decreasing the frequency there is an improve ment in the sugar level in the FBS and PPBS. Here in the table the data shows total volunteers are 432 that was more than the data collected at zero time because at zero time it was 371 for prediabetic condition and others volunteers were more sugar level but after a follow up period of two months the higher sugar level candidates were shifted in the prediabetic level that's why after folloup the no of volunterrs is increases. This is the positive sign and shows the if people will do exersize leave smoking and alcohol consumption they will be more healthier.

The data were also analyzed stastically and found that avoiding smoking and alcohol consumption has a significant different it means smoking and alcohol consumption is fatel for life. Though the sugar level do not having a significant difference between zero time and two monts study. But data reveals that if we do regular exercise for long time it is going to improve volunteers physical health.

Table 1.2: Categorization of Pre-Diabetic subjects during study (n=371) and after a folloup period of two months

	Pre-Diabetic subjects				Pre-Diabetic subjects after 2 months folloup			
Test	Criteria	M	F	MF T	M	F	MF T
FBS	100-126 mg/dl	71	48	119	94	66	160
PPBS	140-200 mg/dl	133	119	252	152	120	272
	Total	204	167	371	246	186	432

3. CONCLUSION
In this study we conclude that the prevalence of risk factors for non-communicable diseases like diabetes mellitus; obesity and physical inactivity is common.In present study out of 1000 subjects screened in five villages of Haryana we found that a) Pre-Diabetes are present in 37.1% subjects and Diabetes in 6% subjects. b) Overweight are present in 29.5% subjects and Obesity in 10% subjects.

There is an urgent need to screen the whole population for risk factors of noncommunicable diseases and to treat them early.If the present trend is maintained, the health system will be unable to support the burden of disease. Prominent cause of diabetes can be prevented but urgent actions are needed and efficient strategies should deal seriously with risk factors like smoking, alcohol, physical inactivity and western diet.Health education has an important role to play in preventing these diseases. On follow-up we tried to educate the people about the healthy lifestyle regarding diet, exercise, avoid alcohol and tobacco and we show improvement in the total score.So, more focus should be given on the interventional programs and activities directed for reducing modifiable lifestyle risk factors for the prevention and control of NCDs.

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