

Prevalence of NCDs Risk Factors in Kandahar City, Afghanistan

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Abstract

Background: The emerging pandemic of non-communicable diseases (NCDs) creates a new frontier for health professionals globally. Most of the forecasted increase in NCDs prevalence and death rates can be accounted for by emerging NCDs epidemics in developing countries.

Objective: The objective of this study was to determine the distribution of NCDs risk factors among adults Patients visiting the different health clinics in private and governmental levels of Kandahar City.

Methods: This was a cross-sectional study of 300 patients visiting different governmental hospitals from November 2015 to February 2016. The questionnaire for the survey was developed with minor adaptation of WHO STEP wise Surveillance (STEPS) questionnaire. Risk factors were presented in descriptive manner. Descriptive statistics were presented using SPSS 21.

Results: The mean age of the study participants was 42.4 years. Of the total, 200 (66.6%) were males and 100 (33.3%) were female. Most of NCDs factors were also prevalent in Kandahar province. Most prevalent NCDs risk factors were tobacco consumption, low physical activity, poor consumption of fruits and vegetables, obesity. We also found that NCDs risk factors were more common among wealthy individuals.

Conclusion: Non-Communicable Diseases are the major health problem in developed countries. Nowadays it is becoming the leading cause of morbidity and mortality in developing countries including Afghanistan. NCDs are causing serious harms to the society both in terms of health and economy. Most of the risk factors of NCDs were also prevalent in Kandahar population.

Keywords: NCDs; Risk factors; Kandahar city

Introduction

The emerging pandemic of non-communicable diseases (NCDs) creates a new frontier for health professionals globally. Most of the forecasted increase in NCDs prevalence and death rates can be accounted for by emerging NCDs epidemics in developing countries [1]. These diseases constituted 43% of the global burden of disease in 1999. Based on current trends, by 2020 they will account for 73% of deaths and 60% of the disease burden in the developing countries [2]. The rapid rise of non-communicable diseases (NCDs) represents one of the major health challenges to countries development. NCDs were estimated to have contributed to almost 60% of deaths in the world and among them about 80% occur in the developing countries [1]. This is as a result of urbanization, industrialization, increased life expectancy and the adoption of western lifestyle characterized by reduced physical activity and dietary changes from foods rich in fruits and vegetables to refined, energy-dense and fatty foods [2,3].

Current evidence shows that four major groups of diseases namely cardiovascular diseases, cancers, respiratory diseases and diabetes mellitus account for 82% of all NCDs deaths [2,3]. Literatures in the past reported association between various common shared factors and

NCDs [4-7]. World Health Organization (WHO) report, 2002 identified unhealthy diet, physical inactivity, tobacco use, and harmful use of alcohol, overweight, raised blood pressure, raised total cholesterol levels and raised blood glucose as the most prevalent NCDs risk factors among the world population [1,2,4-8].

There is very limited data and literatures of this important issue of public health in Afghanistan. Hence we planned this study with the aim to determine the distribution of NCDs risk factors among adults Patients visiting the different health clinics in private and governmental levels of Kandahar City. This study is first of its kind, and will be of immense importance. The study will be able to demonstrate the most prevalent NCDs risk factors among Kandahar province residents that can be tracked by managerial levels and special preventive programs can be arranged at provincial level.

Materials and Methods

Study setting

This study was conducted in private and government health facilities in Kandahar city, Afghanistan. All these facilities provide services to approximately 1 million urban populations and also receive patients from rural areas. These centers provide Non-communicable

diseases counseling, testing and treating services. These facilities are collaboration units of Ministry of Public Health, internationally funded non-governmental organizations and private hospitals.

Study design and period

For this study, sample 300 patients, in which data was collected with face-to-face interview from patients visiting these health facilities. The study period was November 2015 to February 2016.

Study population

Study participants were all those patients visiting the mentioned health facilities during study implementation time.

Data collection methods

We obtained permission to conduct the study from both Kandahar University and Kandahar Public Health Directorate. The objective of the study was shared with them to seek their cooperation to conduct the study. The questionnaire for the survey was developed with minor adaptation of WHO STEP wise Surveillance (STEPS) questionnaire. STEPS instrument was translated into Pashtu and was piloted before full implementation. Important variables in STEPS instrument were diabetes, blood pressure, physical activity, dietary behavior, obesity, age, level of education, and smoking status.

Data management and analysis

Collected data was first entered and coded into the Microsoft Excel to pave way for easy cleanup during the month of December 2015. Data quality was checked for consistency, completeness, and accuracy.

The data were analyzed with the help of IBM SPSS version 21 [9,10]. Basic demographic information was presented using frequency distribution. Risk factors were presented in descriptive manner using various statistics tests.

Ethical consideration

Ethical approval of the study was obtained from the Research Committee of Kandahar Medical faculty, Kandahar University. Unique identifiers were removed from data analysis to ensure confidentiality of the study participants.

Results

The mean age of the study participants was 42.4 (SD +13.5) years. Of the 300 total patients, 200 (66.6%) were males and 100 (33.3%) were female.

Prevalence of behavioral risk factors

Tobacco consumption: The prevalence of tobacco consumption was (26.2%). The proportion of smoking among male was ten folds higher than female. The possibility of underreporting among female cannot be excluded. The mean age for initiation of smoking was (18.4) years. Male reported initiation of smoking at a younger age than female. The vast majority used manufactured cigarettes, and nearly two thirds smoked 20 cigarettes or more per day (Table 1).

Fruits and vegetables servings: The mean number of servings of fruits and vegetables was (1.8 days a week). The majority had single serving of fruits or vegetables, with no gender related differences.

Variable	No of Cases	Percentage
Gender		
Male	200	66.6%
Female	100	33.3%
Tobacco Consumption		
Yes	78	26.2%
No	222	52.2%
Oil Consumption		
Vegetable	290	96.6%
Animal	10	3.4%
Physical activity		
Yes	60	20%
No	240	80%
Awareness of Hypertension		
Yes	100	33.3%
No	200	66.6%
Weight		
Underweight	75	25%
Normal Weight	171	57%
Overweight	46	18%

Table 1: Frequency distribution of NCDs Risk factors.

Fat and oil: Most of the households used vegetable gee, probably due to its accessibility in the monthly food ration at the time of the survey.

Physical activity: Nearly one fifth practiced moderate intensity physical activity (20.2%), whereas nearly one third reported low physical activity (27%). The median time spent for physical activity was higher during work than other domains. The majority of female and the elderly respondents did not practice moderately active walking.

Awareness to hypertension and diabetes: The prevalence of self-reported hypertension was 12.5%, 3.9% were currently on antihypertensive treatment. Nearly one-third received advice on promotion of healthy life style behavior. Self-reported diabetes was 6.5%. More than one third received advice for promoting healthy life style behavior.

High blood pressure: One third (32.9%) of the population never measured their blood pressure. The prevalence of self-reported (documented) hypertension was 12.5% (men 10.9% and women 13.9%). Prevalence of hypertension was related to age. Overall 14.8% of the survey population was having hypertension (blood pressure $\geq 140/90$ mmHg) excluding medication; when history of anti-hypertensive drugs was considered this figure rose to 17.9% suggesting an existence of a huge number of undiagnosed cases in the population who are potentially at more risk of ill consequences. The prevalence of hypertension is more in urban area (19.9%) than in rural area (15.9%). Among those previously reported to have hypertension, 30% were

found to be normotensive at measurement and 18% were normotensive on medication, 31% were hypertensive with medication and 21% were hypertensive and they did not take any medication. This clearly reflects the need for effective hypertension control programme for the population at large.

Overweight and obesity: Based on body mass index (weight in Kg divided by height in meter squared) one fourth (25%) of the population was underweight (BMI < 18.5 kg/m²), 57% were normal weight and 18% were overweight (BMI ≥ 25.0 kg/m²). Proportion of overweight in women (21.6%) exceeded the proportion of those in men (13%). Waist circumference is a measure of central obesity. Eight per cent men and 33.7% women (21.7% sexes combined) had increased waist circumference (>94 cm in men and ≥80 cm in women). Higher prevalence of both central and general obesity in women may predispose them to an increased risk of NCDs.

Hyperglycemia: Blood glucose measurement was not included in this study. Documented history of diabetes was sought. Around 83% of participants never measured their blood glucose. About 3.9% of the people were previously diagnosed to have diabetes (men 4.3% and women 3.6%). Among them, 21% were receiving insulin and 61% oral anti diabetic drugs.

Socioeconomic gradients and clustering of risk factors: As a result, higher proportion of wealthier people was seen to have three or more risk factors concurrently. Around 98.7 percent of the study population has at least one risk factor of NCDs, around 77.4% had two or more risk factors and around 28.3% had 3 or more risk factors. More women (31.5%) were found to have three or more risk factors than men (24.7%).

Discussion

The current study is the first national Study on NCDs risk factors in Kandahar city. The data generated from this Study have reported a high prevalence of risk factors that poses a significant threat to Kandahar city population. In specific terms a high prevalence of tobacco use, inadequate fruit and vegetables consumption and raised blood pressure were observed. The gender and socioeconomic differentials in several factors have also been identified. Furthermore the study result highlights the reversal of social gradient (higher occurrence of some risk factors in the low socioeconomic group) for a few NCDs risk factors [11].

Smoking is clearly a major threat for health; given that more than a quarter of the population is current smoker. A recent study conducted by WHO found that 41% of the eight killer diseases (heart attack, stroke, oral cancer, larynx cancer, lung cancer, Berger's disease, tuberculosis and chronic obstructive pulmonary disease) are attributable to tobacco usage. Our study further supported WHO finding [12,13]. Therefore, our data suggest that tobacco consumption has reached a plateau. A declining trend is expected soon in Afghanistan especially Kandahar city. Unlike many other nations, it is notable in Kandahar city that the prevalence of smoking is very low among women (1.3%). In Afghan society smoking among female is regarded impolite. Strict enforcement of smoke free provisions is essential. A very high level of public support in this regard should be used [13].

Diet and nutrition play a significant role in the prevention of many NCDs such as cardiovascular disease, diabetes, and many forms of cancer. The Study findings underline a suboptimal intake of fruit by

Kandahar city population [14,15]. Number of days in a week with vegetables consumption is particularly high in Kandahar city population. However, the per capita daily consumption is found to be low (2.3 serving). Daily vegetables consumption should not be considered as a sign of health awareness among people of low income country like Afghanistan, rather it is poverty that incapacitates them to afford meat or fish and as a result they have to resort to low cost vegetables. Most people take vegetables as an adjunct to rice or other staple food. This explains why they don't take adequate amount of fruit or vegetables. If >5 servings of either fruit or vegetables consumption is considered adequate only 4.3% fell in to the category.

Low physical activity is considered as an important predictor of many chronic diseases, most notably heart disease, stroke, and obesity, type 2 diabetes, some types of cancers, and osteoporosis. The global estimate for prevalence of physical inactivity among adults is 17% [16-18]. Our observed rate is 27%.

Leisure time physical activity is not popular in our population. Anecdotal evidence suggests that in Kandahar city, people in the urban area undergo fairly moderate physical activity because of their traditional lifestyle. Unplanned urbanization is the major reason behind this difference. Collaboration with local governments (city corporations and municipalities) is necessary to promote physical activity.

Prevention and management of obesity are major challenges, especially in developing countries, where obesity often coexists with underweight [18,19]. According to Study data around one fourth of the population was underweight, 14% were overweight and four percent were obese based on BMI criteria. Proportion of both overweight and obese in women exceeds those in men, which may be a reflection of lower level of physical activity in women. No specific trend of obesity is apparent in the age distribution in either sex; however, in both sexes obesity is found to be less prevalent in the older age groups.

Around 14.8% of the Study population was diagnosed to have hypertension (>140/90 mmHg) on measurement. Inclusion of those on medication increased the prevalence to 17.9%. A population based study in Kandahar city conducted to see the prevalence of ischemic heart disease observed similar prevalence (18.6%) of hypertension. Upon measurement 5.5% were found to have stage II hypertension (>160/100 mmHg) [20-22]. This warrants an aggressive detection and treatment at primary care level to save huge people from risk of ill consequences of hypertension.

People here usually do not measure blood glucose level. Eighty-three per cent of the Study population never measured their blood glucose. Considering the prevalence of diabetes among those who measured blood glucose was 3.9%. In men the percentage is slightly high. As mentioned earlier, current study did not use blood glucose measurement. Addition of blood glucose data definitely would yield a higher prevalence of diabetes. There are lines of evidences that the prevalence of diabetes is raising in Kandahar city [21-23].

Risk factors of NCDs appear in clusters and a person may have several risk factors for single NCDs or a single risk factor may actually result in several diseases. Presence of one risk factor in turn increases the likelihood of having other risk factors, showing a cluster phenomenon. The proportion of subjects with 3 or more risk factors increases along with higher economic quartiles. One study done in five Asian countries (Kandahar city, Afghanistan, Indonesia, Thailand and Vietnam) reported high percentage of people with >3 NCDs risk factors in rural population. [22,23] An Afghanistan study reported

similar gradient in urban Afghanistan population. Similar clustering of risk factors leading to metabolic syndrome has been reported from Vietnam clinic-based and community-based samples as well. This clustering issue in South Asian population needs extensive study for proper planning of NCDs prevention at first hand [23].

Conclusion

Non-Communicable Diseases are the major health problem in developed countries. Nowadays it is becoming the leading cause of morbidity and mortality in developing countries including Afghanistan. NCDs are causing serious harms to the society both in terms of health and economy. Most of the risk factors of NCDs were also prevalent in Kandahar population.

Recommendations

Based on these findings, the specific recommendations are:

- Population based approach using primary health care system for NCDs prevention is warranted. Mass awareness through campaigns and school curricula is necessary.
- Strategies to promote accessibility and availability of fruit and vegetables round the year for all people should be formulated and implemented.
- Appropriate measures should be undertaken, with emphasis on leisure time physical activity, to promote empowering environment for physical activity.
- We suggest of including NCDs related data in demographic health surveys.

Conflict of Interest

The Authors declare that they do not have any conflict of interest.

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