PREVALENCE OF NON-COMMUNICABLE DISEASE RISK FACTORS: A COMMUNITY BASED SURVEY AMONG YOUNG ADULTS

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ABSTRACT

Objective: To determine the frequency of non-communicable disease risk factors among young adults.
Study Design: Descriptive cross-sectional study.
Place and Duration of Study: Educational Institutes of Pakistan, from Mar to Aug 2021.
Methodology: The target population was young individuals aged 18-30 years of Pakistan. In order to achieve a homogenous sample multi-stage cluster sampling technique was used for collection of data. A validated data collection tool was adapted from WHO STEPS survey.
Results: The mean age of the study participants was 22.75 ± 6.418 years. The mean height (ft) and weight (kg) of the respondents was 5.86 ± 16.58 and 61.26 ± 15.51 respectively. There were 272 (45.6%) males and 328 (54.6%) females. The family history of diabetes was 150 (25%) and family history of cardiovascular diseases 100 (16.6%) in our study population. Majority of respondents 290 (48.40%) were physically inactive. Fried foods and carbohydrates consumption is higher and lower intake of vegetables per day 150 (25%). Out of 280 (46%) respondents consumed 1-2 cups of coffee daily while 450 (75%) consumed 0.5-1 L of soft drink daily. Most of the 320 (53.33%) respondents are stressed, 360 (60%) anxious, 352 (59%) fatigued, 296 (49.3%) experienced anger and 200 (33.33%) were active smokers.
Conclusion: This multi-center study concludes that there is an increasing trend of non-communicable diseases risk factors among the young population of Pakistan, which demands timely intervention to curtail the existing burden of NCD's.

Keywords: Non-communicable diseases (NCDs), Young Adults, Cardiovascular Disease.

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INTRODUCTION

Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioral factors. The main types of NCD are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.[1]

Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, more than 15 million people die from a NCD between the ages of 30 and 69 years; 85% of these "premature" deaths occur in low- and middle-income countries. About 77% of all NCD deaths are in low- and middle-income countries. Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.3 million), respiratory diseases (4.1 million), and diabetes (1.5 million). These four groups of diseases account for over 80% of all premature NCD deaths. Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from a NCD.[2]

The Asian region has been documented to have a higher NCD burden as compared to the western populations, and majority of this burden is contributed by the economically disadvantaged populations that are mainly in the South Asian region. Pakistan is amongst these under-developed regions equally affected by the non-communicable disease burden as the rest of the world.[3] Pakistan has the highest rate of urbanization in South Asia and a population of 187 million with an annual percapita health expenditure equivalent to US$ 63.90. In terms of the number of lives lost due to ill-health, disability, and early death (DALYs), NCDs account for 59% of the total disease burden in Pakistan with cardiovascular disease representing the largest share followed by chronic respiratory diseases, cancer and diabetes.[4]

Investing in better management of NCDs is critical. Management of NCDs includes detecting, screening and treating these diseases, and providing access

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to palliative care for people in need. High impact essential NCD interventions can be delivered through a primary health care approach to strengthen early detection and timely treatment. Evidence shows such interventions are excellent economic investments because, if provided early to patients, they can reduce the need for more expensive treatment.

Countries with inadequate health insurance coverage are unlikely to provide universal access to essential NCD interventions. NCD management interventions are essential for achieving the global target of a 25% relative reduction in the risk of premature mortality from NCDs by 2025, and the SDG target of a one-third reduction in premature deaths from NCDs by 2030.[2] According to vision 2025 the projected population pyramid of Pakistan as shown in Figure-1. Constitutes a major proportion of younger age group so we need to focus on this segment of our population to create awareness regarding various risk factors for NCDs and develop cost effective strategies and interventions to control the rising burden of disease.

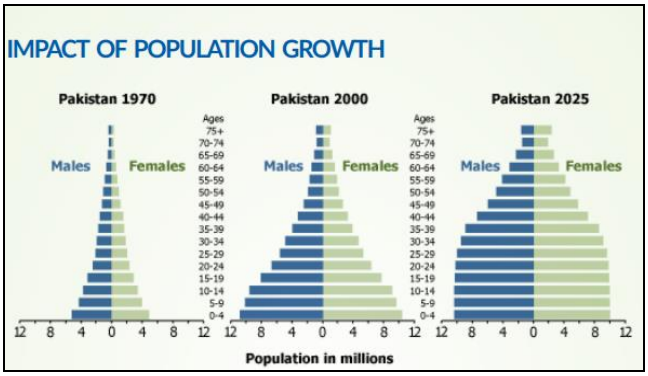

Figure-1: Pakistan vision 2025.

Pakistan is currently facing the double burden of communicable (38%) and NCDs (49%) according to WHO NCD Country Profiles 2014. NCDs account about 50% of all deaths. Population pyramid of Pakistan shows distribution of population regarding age and sex structure. According to the pyramid, majority of the Pakistani population comes under the age bracket of young adults. This study aims to target the presence of NCDs risk factors in younger population, so that evidence-based guidelines and strategies can be developed to reduce the burden of diseases in young population.

METHODOLOGY

This descriptive cross-sectional study was conducted in educational Institutes of Pakistan (Table), from March to August 2021.

Inclusion Critieria: The target population was young individuals aged 18-30 years from all provinces of Pakistan.

Exclusion Criteria: Unwilling to participate in study.

Table: List of educational institutes that participated in the study.

Name of Institutes
Federal Capital
NUST University, Islamabad
COMSATS University, Islamabad
Foundation University Medical College, Islamabad
Capital University of Science & Technology, Islamabad
Hamdard University, Islamabad
Punjab
Beaconhouse National University
Lahore College Women university
Army Medical College, Rawalpindi
Armed Force of Institute of Cardiology, Rawalpindi
Institute of Southern Punjab, Multan
Rawalpindi Women University
University of Gujrat
University of Agriculture Faisalabad
Institute of Chartered Accountants of Pakistan, Faisalabad
Institute of Public Health Lahore
Fatima Jinnah Medical College
Beaconhouse School System
Balochistan
Bolan University of Medical & Health Science, Quetta
Combined Military Hospital Quetta
Sindh
Shah Abdul Latif University , Sindh
University of Karachi
Benazir Bhutto Shaheed University
AgaKhan University
Gilgit Baltistan
Fatima Jinnah Degree college, Gilgit
Khyberpakhtunkhwa (KPK)
Khyber Medical University, Peshawar
Peshawar University
Ayub Medical College
Women Medical College

Total 600 individuals participated in the study. Due to COVID-19 Pandemic constraints data tool was coded into Google forms and distributed among different provinces, however from twin cities Islamabad and Rawalpindi data was collected by the designated data collection team. In order to achieve a homogenous sample multistage cluster sampling technique was used for collection of data. A validated data collection tool was adapted from WHO STEPS Survey.[5] Pilot testing for the feasibility of the study was performed on 10% of the total sample size. Crohnbach alpha of the questionnaire was 0.7 making the questionnaire a valid and reliable tool. Ethical clearance for the survey was

taken by the Institutional Ethical Review Board of AFIC/NIHD prior to the initiation of data collection. Informed consent from each participant was sought prior to the data collection. Formal permission for data collection was granted from Head of the Institutes through E-mails and phone calls in order to facilitate uninterrupted data collection due to smart lockdown in current COVID-19 pandemic in different cities. The various parameters like family history, physical activity and young adults evaluated in this survey were defined as per the definitions given by World Health Organization.[1] Data was analyzed by using SPSS-23. Data was cleaned from any errors or discrepancies prior to data analysis. Mean ± SD was calculated for the continuous variables while categorical variables were expressed in frequencies/percentages.

RESULTS

The mean age of the study participants was 22.75 ± 6.418 years. The mean height (in ft) and weight (kg) of the respondents was 5.86 ± 16.58 and 61.26 ± 15.51 respectively. There were 272 (45.6%) males, while majority of the respondents were females with a frequency of 328 (54.6%). The family history of diabetes was more 150 (25%) as compared to family history of cardiovascular diseases 100 (16.6%) in our study population. In our study population 100 (32.2%) were performing mild activity while 132 (42.5%) were performing moderate physical activity. Only 78 (25.16%) respondents performed vigorous activity and majority of or respondents 290 (48.40%) were physically inactive (Figure-2).

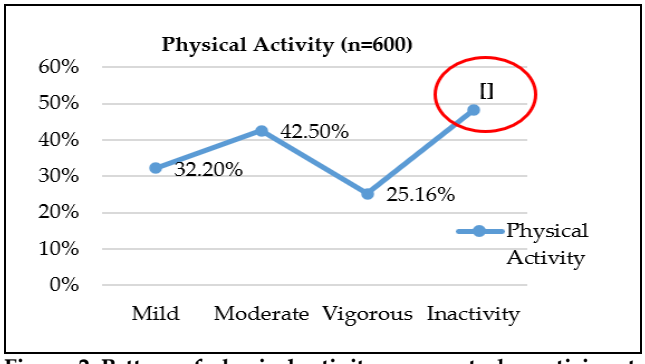

Figure-2: Pattern of physical activity among study participants.

Among our study respondents' 1-2 servings of fried food was consumed daily. Out of 232 (39%) respondents consumed 1-2 servings of carbohydrates daily. Our study showed lower frequency intake of vegetables per day 150 (25%) as compared to recommended daily intake of vegetables 400 grams per day as suggested by WHO, 300 (50%) had 1-1.5 L daily intake of water. Out of 280 (46%) respondents consumed 1-2 cups of coffee daily while 450 (75%) consumed 0.5-1 L of soft drink daily (Figure-3). Our study revealed that 320 (53.33%) respondents take stress daily. Out of 360 (60%) of respondents felt anxious almost every day, 352 (59%) participants felt fatigued daily, 296 (49.3%) individuals of our study population experienced anger sometimes, 270 (45%) participants slept on an average of 5-6 hours daily (Figure-4). Out of 600 respondents, 200 (33.33%) were active smokers. Among the active smokers 11% consumed 1-2 packs of cigarettes per day.

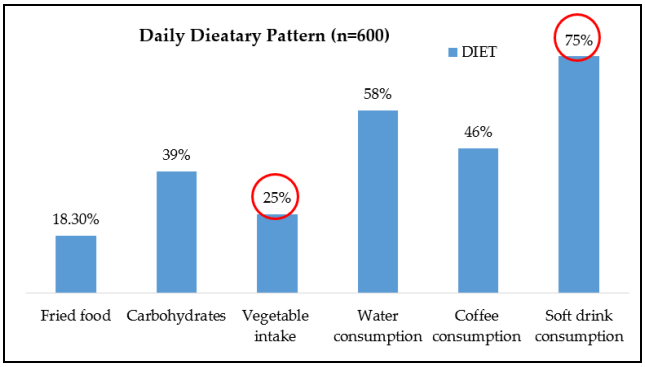

Figure-3: Dietary patterns of the respondents.

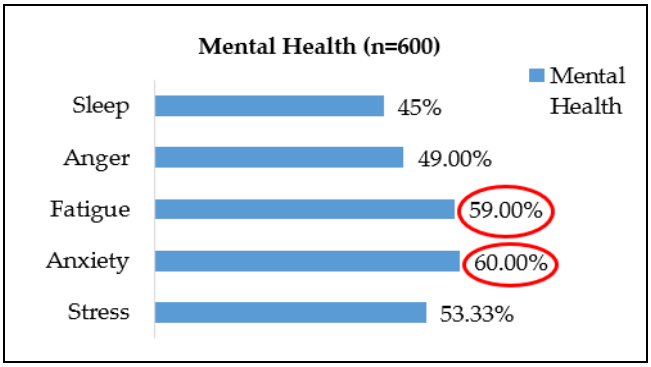

Figure-4: Mental Health status of respondents.

DISCUSSION

Smoking and eating of unhealthy food was a common prevalent risk factor among our study participants. It was also observed that 33.33% of our study population were active smokers, 10% of the respondents consumed 1-2 packs of cigarette per day. In WHO NCDs Pakistan Survey 2016 the prevalence of smoking among respondents was 26.2%. Among our study respondents' 1-2 servings of fried food was consumed daily. Out of 232 (39%) respondents consumed 1-2 servings of carbohydrates daily. Our study showed lower frequency intake of vegetables per day 150 (25%) as compared to recommended daily intake of vegetables 400 grams per day as suggested by WHO.[11] Although lesser than males but according to a study females are more prone on developing cardiovascular diseases at

early age. Majority of the respondents were females with a frequency of 328 (54.6%) in our survey. This study revealed that 320 (53.33%) respondents take stress daily. Out of 360 (60%) of respondents felt anxious almost every day, 352 (59%) participants felt fatigued daily, 296 (49.3%) individuals of our study population experienced anger sometimes, 270 (45%) participants slept on an average of 5-6 hours daily. Stein *et al*[12] states in their study odds ratio for the association of heart disease with mental disorders were; 2.1 for mood disorders, 2.2 for anxiety disorders. Future studies should be conducted to evaluate the prevalence of stress among young individuals. A study stated that a healthy lifestyle is one of the major factors in CVD prevention, a fact which is emphasized by experts from the European Society of Cardiology (ESC).[13] In this study population 100 (32.2%) were performing mild activity while 132 (42.5%) were performing moderate physical activity. Only 78 (25.16%) respondents performed vigorous activity and majority of or respondents 290 (48.40%) were physically inactive. The family history of diabetes was more 150 (25%) as compare to family history of cardiovascular diseases 100 (16.6%) in our study population. Preventive actions should begin even before birth by educating young parents, and should subsequently be continued at pre-school and school age. Therefore, actions aimed at preventing CVD should be part of everyday life beginning with childhood and they should be continued for adolescents, adults and the elderly. Obesity in the first years of life increased the risk of obesity in adulthood and the development of metabolic syndrome and type 2 diabetes in adolescence and adulthood. Another study observed that obese adults who were overweight in their childhood had an increased risk of dyslipidemia, hypertension, type 2 diabetes and carotid-artery atherosclerosis.[14] Other authors also suggested that the development of atherosclerosis may be increased by the occurrence of CVD risk factors in early life. Therefore, early prevention of risk factors may have a significant influence on CVD development in the future. The excessive body weight, hypertension, low physical activity, smoking and low fruit and vegetable consumption found in a significant percentage of the study group may contribute to the future development of cardiovascular diseases in these individuals.[15-18]

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LIMITATION OF THE STUDY

Present study focuses on the significant cohort of the young population of Pakistan for the determination of Non-Communicable Disease risk factors among young adults. However; changing circumstances due to COVID-19 pandemic and time constraint, sample size was minimized.

RECOMMENDATIONS

- There is a need for Health Awareness and Health education and promotion strategies regarding NCD and their risk factors at institutional levels.
- Awareness campaigns regarding the healthy food preferences versus non nutritious food should be held in educational institutions on regular basis.
- Low physical activity, poor self-athletic ability and increased screen time contribute to sedentary life style resulting in obesity increasing the NCDs risk factors burden. Hence these issues should be addressed effectively and timely to control the spread of NCDS.
- Appropriate curriculum components including nutritional knowledge and adolescent health should be introduced in all educational institutes including placement of trainee healthcare professionals.
- There is a need to carry out these type of multi-center public health surveys at national level to document the statistics at the regional/country level to sensitize the policy makers to establish the guidelines for the prevention of non-communicable diseases.

CONCLUSION

This multi-center study concludes that there is an increasing trend of non-communicable diseases risk factors among the young population of Pakistan, which demands timely intervention to curtail the existing burden of NCD's.

Conflict of Interest: None.

Author's Contribution

FP: Principle investigation, HK: Data collection, AK: Manuscript writing, RJ: Report writing, NS: Data analysis, SMHK: Intellectual contribution, FR, AS, RP: Data collection, AFI: Intellectual contribution.

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