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Cardiovascular risk factors in Pakistan: Current trends

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Abstract
To ascertain the prevalence of major cardiovascular dangerous aspects in a Pakistani community, we conducted case-control research. This research enrolled a total of 825 patients (550 man and 275 women) and 784 control participants (436 men and 258 women). We included patients who had a history of coronary artery disease. Using pre-established criteria, we evaluated significant risk variables such as age, hypertension, body mass index, and dyslipidemia. The student's t test was used to compare the biochemical and clinical markers between controls and patients. We noticed that the patient group had greater cardiovascular disease risk factors than the controls did (P<0.06). In comparison to men, women in the entire study group had higher levels of total cholesterol, triglycerides, and very low-density lipoprotein cholesterol (P = 0.02, 0.03, and 0.03, respectively). In patients when compared to man, all risk variables in the patient group were considerably greater and more common in women (P<0.06). To investigate the effects of these risk variables separately, the study population was also examined in relation to smoking status and body mass index. Blood pressure and cholesterol levels were considerably higher in smokers and study participants with a higher body mass index in the current study; the risk factor of age was also examined. Among the three age groups (46, 47–56, and 57 years), people under 46 had the highest levels of total cholesterol, triglycerides, low density lipoprotein cholesterol, very low density lipoprotein cholesterol, and high density lipoprotein cholesterol. In summary, the current study shows a greater tendency for cardiovascular disease risk factors at a younger age, with a preponderance of women. The most noticeable dangerous aspects are dyslipidemia and hypertension.

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Keywords: coronary artery disease, dyslipidemia, risk factors, and cardiovascular disease

1. Introduction

Risk factor for cardiovascular disease the most common cause of death around the globe is persistent circulatory disease. The epidemiological shift in the 20th century made circulatory disease the leading cause of disability worldwide. It will continue to be the leading cause of death in 2030, [1] according to predictions made for global health [1]. Cardiovascular disease and its associated atherothrombotic consequences arise as a result of a person's lifestyle, the environment, and hereditary predisposition. Cholesterol issues and coronary disease.

The classification of dangerous aspects for cardiovascular disorders includes traditional, classical, and new dangerous aspects

[2]. In socioeconomically backward nations like Pakistan, these risk factors continue to play a major role. Although the impact of each dangerous aspect on cardiovascular disorder varies widely, the existence of many dangerous aspects has a cumulative effect that eventually impacts how the disease develops. Although no innovation has yet been created for people with low and intermediate incomes, the majority of risk assessment techniques now in use have been adapted from studies on rich nations [2].

The most widely used approach for estimating risk is based on Framingham research, although it has resulted in over- or underestimating the risk variables [3]. Using only the information from normal health examinations, Zhu *et al*. have created a synthetic predictor using 16 biomarkers that will aid in cardiovascular disease dangerous prediction [4]. All of the unique variables influencing the precise estimate of the dangerous factors in South Asia must be included in the risk score system for South Asians. These include aspects of population dynamics, comorbidities, cultural diversity, socioeconomic profiles, languages, and lifestyle given the region's varied demographic composition.

According to studies, the Asian area has a larger cardiovascular disease load than western residents, and the bulk of this load is carried by economically deprived individuals, who are primarily found in South Asia [5]. Pakistan is one of these underdeveloped areas that are just as afflicted by the cardiovascular disease pandemic as the rest of the globe, yet there is very little information that has been formally documented on this issue. The objective of the current study is to further our knowledge of the condition while also assisting in the creation of effective regional cardiovascular disease prevention measures.

Material and methods

Study participants

To ascertain the prevalence of several cardiovascular dangerous aspects in a Pakistani community, we conducted case-control research. The information shown here comes from the Rawalpindi city of Pakistan. The patient samples came from the Hollyfamily hospital, while the control samples came from people visiting the general OPD for a checkup, medical students, and volunteers from the general public. The study's whole participant population belonged to a middling socioeconomic class. This study included 784 control volunteers (436 men and 258 women) and a total of 825 patients (550 men and 275 women). The Institutional Review Board of Hollyfamily gave its approval to the study from January 2023 to March 2023 that is being presented here.

Study inclusion requirements

Both sick and control participants were distinguished using a questionnaire. Personal data (name, age, gender, etc.), dangerous aspects data (smoking, etc.), an information of bodily measurements (weight, blood pressure, height, etc.), and medical record (malady profile and analytic complaints) were all requested in the questionnaire. We included patients who had the past coronary artery diseases. Electrocardiography, echocardiography, chest X-ray and angiography were some of the diagnostic procedures for cardiovascular diseases.

The controls were independent, healthy individuals from the same region and racial group as the patients. Two unconventional cardiologists, who were not informed of the study's goals, evaluated their clinical histories. The electrocardiograms of the control patients were normal, and they had no history of heart illnesses or other atherosclerotic vascular conditions. To age-match the circulatory disease patients, a sample of all the controls was taken.

Biochemical profiles

Participants in the research had blood drawn in order to measure their total cholesterol, high density lipoprotein cholesterol and triglycerides. These blood samples were put into sterile plain serum tubes, where they were left to coagulate for an hour at room temperature. The tubes were then maintained at -80°C for subsequent examination after being centrifuged for five minutes at 4000 rpm to separate serum from cellular components. Utilizing AMP Diagnostics kits from Austria, we estimated total cholesterol, triglycerides, and high density lipoprotein cholesterol in our lab. Each of these metabolic profiles had an calculated value in mg/dl.

Definitions

A body mass index of >26 kg/m2 was deemed to fall into the category of overweight in accordance with the updated standards for the Asian population [6]. The measurement of blood pressure was done with a conventional mercury sphygmomanometer. A minimum of two readings were taken at 11-minute intervals, and in the event of an aberrant reading, a third reading was taken 31 minutes later. Hypertension was defined as having a systolic blood pressure of 140 mm Hg or higher and a diastolic blood pressure of 90 mm Hg or higher [7].

Statistic evaluation

The Student's *t* test was used to analyses clinical and biochemical data that were represented as mean ± standard deviation. To compare the age groups in the study population, one-way analysis of variance (ANOVA) and post hoc Turkey's test were used. Statistical significance was defined as a P value of < 0.06.

Results

The research population's baseline, clinical, and biochemical features

Table 1.1 includes the baseline, clinical, and biochemical characteristics. In this case-control study, 825 patients with a mean age of 54.19 ± 12.85 and 784 healthy controls with a mean age of 53.76 ± 9.7 were examining. In comparison to controls, the patient group's body mass index, systolic blood pressure, diastolic blood pressure, and lipid profile values were all considerably higher (P<0.06).

Table 1

Lists the clinical and biochemical characteristics of healthy individuals and people with cardiovascular disease.

Data is presented as means ±standard deviation, with a P value determined using the unpaired student's independent samples *t* test. A P value of less than 0.06 denotes statistical significance. On a scale that was log-transformed, P values were determined.

n: subjects in the sample; body mass index, or body mass index; blood pressure, or HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation.

VLDL-C stands for very low-density lipoprotein cholesterol. TC stands for total cholesterol.

Table 1

Features	Controls (n = 794)	Patients (n = 835)	P value
Age	54.77 ± 9.8	54.18 ± 12.86	0.281
Body mass index	23.81 ± 3.61	26.23 ± 3.50	0.01*
Systolic blood pressure	118.56 ± 12.01	137.92 ± 23.64	<0.0001* (mm Hg)
Diastolic blood pressure	83.43 ± 6.97	87.67 ± 12.66	<0.0001* (mm Hg)
Total cholesterol (mg/dl)	153.66 ± 24.12	167.44 ± 48.97	<0.0001*
Triglycerides (mg/dl)	136.03 ± 57.32	146.33 ± 68.70	0.001*
Low density lipoprotein-C	85.68 ± 23.51	97.97 ± 37.47	<0.0001* (mg/dl)
High density lipoprotein-C	40.02 ± 13.67	34.40 ± 11.6	<0.0001* (mg/dl)
Very low density lipoprotein-C	28.96 ± 10.67	28.5 ± 13.67	<0.0001* (mg/dl)
TC-high density lipoprotein-C	4.06 ± 1.11	5.03 ± 1.75	<0.0001*

Studies of the research population's gender

To compare the clinical and biochemical characteristics of males and females, the study population was segmented according to gender (Table 2). The average age of the study population was 54.38 ± 12.15 years for men (n = 1051) and 54.61 ± 11.33 years for women (n = 578), respectively. While other risk markers, including total cholesterol, triglycerides, and very low density lipoprotein-C, were considerably higher in women, the body mass index was significantly higher in men. There were no significant variations in BP, low density lipoprotein-C, high density lipoprotein-C, or total; cholesterol across the research groups.

Table 2

Lists the clinical and biochemical characteristics of the male and female research participants

Data is presented as means ±standard deviation, with a P value determined using the unpaired student's independent samples *t* test. A P value of less than 0.06 denotes statistical significance. On a scale that was log-transformed, P values were determined.

n: subjects in the sample; body mass index, or body mass index; blood pressure, HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation. VLDL-C stands for very low-density lipoprotein cholesterol. TC stands for total cholesterol.

Table 2

Features	Men (n = 1051)	women (n = 578)	P value
Age (years)	54.38 ± 12.15	54.61 ± 11.33	0.78
Body mass index	26.17 ± 3.39	25.78 ± 3.72	0.05* (Kg/m2)
Systolic blood pressure	138.48 ± 21.46	118.40 ± 23.20	0.83 (mm Hg)
Diastolic blood pressure	85.62 ± 11.79	85.60 ± 10.70	0.95 (mm Hg)
Total cholesterol	150.26 ± 41.37	155.20 ± 38.72	0.02* (mg/dl)
Triglycerides	131.21 ± 66.77	138.72 ± 61.31	0.03* (mg/dl)
Low density lipoprotein-C	91.42 ± 32.35	91.63 ± 33.48	0.8 (mg/dl)
High density lipoprotein-C	36.33 ± 12.62	37.39 ± 11.75	0.08 (mg/dl)
Very low density lipoprotein-C	27.24 ± 12.15	28.74 ± 11.06	0.01* (mg/dl)
TC: high density lipoprotein-C	4.50 ± 1.69	4.5 ± 1.54	0.42

The patient group was split up into different gender groups and then analyzed in order to further examine the risk variables (Table 3). When compared to the patients, men (n = 565), the women (n = 270) had substantially higher systolic blood pressure, total cholesterol, triglycerides, low density lipoprotein-C, and very low density lipoprotein-C. The diastolic blood pressure and high density lipoprotein-C did not reveal any appreciable variations between the two groups.

Table 3

Clinical and biochemical characteristics of the patient group's male and female patients

Data is presented as means ± standard deviation, with a P value determined using the unpaired student's independent samples *t* test. A P value of less than 0.06 denotes statistical significance. On a scale that was log-transformed, P values were evaluated.

n: subjects in the specimen; body mass index, or BMI; blood pressure, or BP HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation. VLDL-C stands for very low-density lipoprotein cholesterol. TC stands for total cholesterol.

Table 3

Features	Men(n = 565)	women (n = 270)	P value
Age	54.25 ± 12.8	54.06 ± 12.84	0.73
Body mass index	26.18 ± 3.64	26.38 ± 3.62	0.46 (Kg/m2)
Systolic blood pressure	145.38 ± 24.46	138.93 ± 26.66	0.001* (mm Hg)
Diastolic blood pressure	87.22 ± 14.36	88.62 ± 14.23	0.17 (mm Hg)
Total cholesterol	163.15 ± 47.63	177.93 ± 48.70	<0.001* (mg/dl)
Triglycerides	142.68 ± 67.56	168.59 ± 65.94	0.0001* (mg/dl)
Low density lipoprotein-C	96.79 ± 37.25	106.33 ± 38.14	0.0001* (mg/dl)

High density lipoprotein-C	36.18 ± 12.82	37.17 ± 12.98	0.23 (mg/dl)
Very low density lipoprotein-C	29.33 ± 14.70	32.82 ± 14.02	<0.001* (mg/dl)
TC: high density lipoprotein-C	4.98 ± 1.76	5.18 ± 1.72	0.01

Study population characteristics according to smoking status and BMI

To examine the effects of these risk variables separately, the study population was divided into groups based on whether or not they smoked and their body mass index (25 and 25 kg/m2). When compared to non-smokers (n = 1279), smokers (n = 457) had considerably lower high density lipoprotein-C and TC: high density lipoprotein-C and significantly higher blood pressure. The smoking group also had high levels of the other risk variables (total cholesterol, triglycerides, low density lipoprotein-C, and very low density lipoprotein-C), but the findings were not statistically significant (Table 44).

Table 4

Details the research population's smokers and non-smokers' clinical and biochemical characteristics.

Data is presented as means standard deviation, with a P value determined using the unpaired student's independent samples *t* test. A P value of less than 0.06 denotes statistical significance. On a scale that was log-transformed, P values were determined.

n: subjects in the sample; body mass index, or BMI; blood pressure, or BP HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation. VLDL-C stands for very low-density lipoprotein cholesterol. TC stands for total cholesterol.

Table 4

Features	(Smokers) n = 457	(Non-smokers) n = 1279	P value
Age (years)	53.75 ± 11.95	54.77 ± 11.83	0.08
BMI (Kg/m2)	26.24 ± 3.56	25.96 ± 3.76	0.17
Systolic BP (mm Hg)	141.81 ± 22.97	137.19 ± 21.75	<0.001*
Diastolic BP (mm Hg)	86.39 ± 12.57	85.31 ± 11.95	0.09
TC (mg/dl)	174.21 ± 44.50	171.18 ± 39.88	0.18
TG (mg/dl)	156.59 ± 73.44	152.96 ± 61.47	0.4
LDL-C (mg/dl)	94.31 ± 33.15	93.15 ± 34.02	0.62
HDL-C (mg/dl)	37.19 ± 11.89	39.28 ± 13.79	0.003*
VLDL-C (mg/dl)	29.31 ± 17.48	28.59 ± 15.09	0.5
TC: HDL-C	4.91 ± 1.84	4.58 ± 1.65	<0.001*

When compared to study participants with a body mass index of 26 kg/m2 (n = 874), those with a body mass index of 26 kg/m2 (n = 775) also had substantially higher levels of systolic blood pressure, diastolic blood pressure, total cholesterol, low density lipoprotein-C, and TC: high density lipoprotein-C (Table 5).

Table 5

Shows the body mass index-related clinical and biochemical features of the study cohort.

Data is presented as means standard deviation, with a P value determined using the unpaired student's independent samples *t* test. A P value of less than 0.06 denotes statistical significance. On a scale that was log-transformed, P values were determined.

N: subjects in the sample; body mass index, or BMI; blood pressure, or BP; HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation. VLDL-C stands for very low-density lipoprotein cholesterol. TC stands for total cholesterol.

Table 5

Features	(BMI) ≤ 26(n = 874)	(BMI) ≥ 26(n = 775)	P value
Age (years)	54.26 ± 12.26	54.70 ± 11.38	0.3
Systolic blood pressure	136.63 ± 18.94	140.52 ± 23.17	<0.001* (mm Hg)
Diastolic blood pressure	84.60 ± 12.32	86.76 ± 12.79	<0.001* (mm Hg)
Total cholesterol	169.04 ± 38.87	175.43 ± 41.31	0.0001* (mg/dl)
Triglycerides	153.70 ± 63.74	154.17 ± 66.31	0.89 (mg/dl)
Low density lipoprotein-C	88.92 ± 33.89	96.41 ± 32.82	0.0001* (mg/dl)
High density lipoprotein-C	38.25 ± 12.11	38.24 ± 15.54	0.122 (mg/dl)
Very low density lipoprotein-C	28.74 ± 13.54	29.83 ± 14.06	0.19 (mg/dl)
TC: high density lipoprotein-C	4.62 ± 1.74	4.73 ± 1.67	<0.001*

Age-related clinical and biochemical features of the study population

In the current study, the impact of age as a risk factor was also examined, and samples were divided based on age (Table 6). The individuals under the age of 46 (n = 388) had the highest levels of total cholesterol, triglycerides, low density lipoprotein-C, very low density lipoprotein-C, and high density lipoprotein-C among the three age groups (46, 47–56, and 57 years) (P 0.06). There was no discernible difference between the age groups of 46 and 47–56 years (n = 594) when the risk variables were compared within groups (p >.06). However, when compared with other groups individually, the group with an age of 57 years (n = 657) revealed considerably reduced levels of lipid profiles (total cholesterol, triglycerides, low density lipoprotein-C, high density lipoprotein-C, and very low density lipoprotein-C).

Table 6

Shows the age-related clinical and biochemical parameters of the study cohort

Values are presented as means standard deviation; one-way analysis of variance (ANOVA) was used to get the P value. For the comparison between the groups, Turkey's post hoc test was used; a P value of 0.06 shows statistical significance. 47-56 vs.>57; <46 vs.47-56, >56; *<0.06;* <0.001; *** <0.00001.

n: subjects in the sample; body mass index, or BMI Blood pressure, or BP HDL-C stands for high-density lipoprotein cholesterol, whereas LDL-C stands for low-density lipoprotein cholesterol. SD is for standard deviation. Very low-density lipoprotein cholesterol is referred to as v-LDL and total cholesterol as TC.

Table 6

Features	Age ≤46 yrs (n = 388)	Age 47-56 yrs (n = 594)	Age ≥57 yrs (n = 657)	P value
Body mass index	25.92 ± 3.84	25.92 ± 3.64	26.22 ± 3.70	0.25 (Kg/m2)
Systolic blood pressure	138.51 ± 18.87	138.61 ± 22.03	138.27 ± 22.90	0.96 (mm Hg)
Diastolic blood pressure	86.36 ± 12.24	85.21 ± 12.26	85.52 ± 10.32	0.37 (mm Hg)
Total cholesterol	179.65 ± 53.77	174.26 ± 49.37	165.36 ± 38.55	<0.001 (mg/dl)
Triglycerides	160.54 ± 74.65	153.62 ± 72.71	150.12 ± 74.37	0.04 (mg/dl)
Low density lipoprotein-C	99.07 ± 48.80	94.60 ± 31.50	89.08 ± 28.28	<0.001 (mg/dl)
High density lipoprotein-C	39.65 ± 23.07	48.51 ± 13.59	37.50 ± 12.49	0.006 (mg/dl)
Very low density lipoprotein-C	31.10 ± 13.93	29.72 ± 13.54	29.02 ± 13.87	0.03 (mg/dl)
TC: high density lipoprotein-C	4.78 ± 1.72	4.67 ± 1.82	4.61 ± 1.59	0.24

Discussion

The purpose of the current study is to look at the cardiovascular dangerous aspects in a group of Pakistanis. The findings showed that the research group had a high occurrence of several cardiovascular dangerous aspects, including an abnormal lipid profile, high blood pressure, smoking, and a higher body mass index. According to Husain *et al.*'s analysis of the evaluation of circulatory dangerous aspects in the South Asian population, these groups had higher occurrence of dangerous aspects (both conventional and untraditional) [2]. Additionally, it has been shown that these groups' risk status vary not just among nations but even within a single residents [2]. Major modifiable dangerous aspects in the Pakistani residents were found in recent research by Syani and Barolia [8]. Only two community studies have been done to determine the real occurrence of cardio vascular disease and its related dangerous aspects, which highlights the lack of community data for these dangerous aspects [8].

The most notable result of the current epidemiological analyses is the elevated levels of lipid profiles, which are higher in subjects with cardio vascular disease (Table 1), smokers (Table 4), and subjects with a higher body mass index (Table 5) in the study community (37% of the total population). Dyslipidemia, which is characterized by elevated levels of Apo lipoprotein B, triglycerides, lipoprotein (a), and low density lipoprotein-C and low levels of high density lipoprotein-C and apoA1 in South Asians, is the primary cause of the extra burden of cardio vascular disease in this community [9]. One of the fundamental characteristics of Pakistani culture is the wide use of saturated and trans fats in daily cooking, especially in curry-based cuisines, and the excessive deep-frying combined with a lack of physical exercise, which results in elevated lipid levels.Previous research in our community has produced a range of findings: Jafar *et al*. identified high total cholesterol levels in 34.6% [10], Kayani *et al*. recorded 10% [11], and Khan *et al*. discovered 16% of the study participants had elevated cholesterol levels [12]. According to research published in the Lancet in 2011, although Asians' mean total cholesterol levels were not the highest, they were steadily rising because of the epidemiological shift towards urbanization [13]. One of the causes of unhealthful dietary practices may also be the increased intake of carbs as a result of inflation, which makes fresh fruits and organic foods out of the reach of the average person. Another study showed that the urban community of Pakistan consumed 37.3% fat and 52.5% carbs. People need to be made more aware of the cheaper and better eating options immediately. They should receive instruction and encouragement on how to adopt a healthier lifestyle while staying within their socioeconomic range. As a result, extensive and thorough research is needed to design these methods, and government funding and public awareness campaigns are needed for their implementation.

In the current study, the differences in cardio vascular disease occurrence according to sex have also been looked at. In the entire community under study, women exhibited higher lipid levels than men (Table 2). Furthermore, when the victims were analyzed based on sex (Table 3), this increased danger became even more apparent. In the past, it has been noted that Pakistani women had a greater tendency for cardio vascular disease. Female have an identically high danger of having cardio vascular disease as do male, according to a previous study by Jafar *et al*. [10]. The NHSP study later concluded that females are more susceptible to cardio vascular disease than males [14]. Furthermore, compared to men, females had higher electrocardiographic indications of ischemia in 2008 [15]. In each of these studies, it has been proposed that growing older is to blame for the rising prevalence of cardio vascular diseases in female. However, the danger variables in the current study are more obvious at a young age (Table 6). Men had myocardial ischemia eight years sooner than women did, according to the INTERHEART research (conducted in 53 countries); nonetheless, females were more likely to die from an infarction [16]. In Pakistani society, female are undereducated, get married young, and aren't aware of dangerous aspects that may be changed. Their access to healthcare is hampered by their psychological and economic dependency on male. Another factor may be the under recognition of cardio vascular disease in females, various treatment modalities, and lower participation of females in clinical trials. These statistics highlight the urgent need to investigate the causes of the massive cardio vascular disease load and the existence of dangerous aspects in female.

With a rise in body mass index, dyslipidemia and other CV dangerous aspects have become increasingly common in South Indian adults [17]. Similar findings were seen in the current study, where participants with a higher body mass index had higher systolic blood pressure, diastolic blood pressure, total cholesterol, low density lipoprotein-C, and TC-high density lipoprotein-C levels. This strongly suggests that body mass index has a major influence on cardio vascular dangerous aspects. An investigation into the high occurrence of obesity in Karachi revealed comparable findings [18]. A raised body mass index is one of the dangerous aspects that may be readily changed by increasing physical activity and making dietary changes. Campaigns to raise awareness and appropriate direction from medical professionals and the general public can help with this.

Growing older has been linked to an increase in cardio vascular disease occurrence in various nations [19]. Stroke, atherosclerosis, hypertension and heart failure are responsible for almost 40% of mortality among the US population under 65 [20]. Although a person's chronological age might have an impact on plaque production, it can be challenging to gauge a person's CV age. The fundamental cause of this is the impact of numerous cardio vascular disease dangerous aspects on the development of plaque at distinct stages of life. Table 6 contains an analysis of the clinical and biochemical parameters of the study group by age. Deranged6. Significantly more evidence of a dyslipidemia lipid profile was found in younger people than in older people.Comparing South Asians to Caucasians and Chinese, the danger of cardio vascular disease is acquired around 10 years earlier [21]. In those less than 70, cardio vascular disease-related mortality was 50 percent, compared to 23 percent in the western population [22]. Adolescence was characterized by a decreased incidence of cardio vascular disease danger, whereas among urban Asian Indians between the ages of 30 and 39, these variables rapidly increased [23]. As people age, their pathophysiological processes become more developed, having a significant impact on their CV systems [19]. The current data indicate that Pakistan's community is more susceptible to cardiovascular disease. It is also clear that people who do not currently have any illnesses are more likely to develop cardiovascular diseases later, if not sooner, as a result of this increased vulnerability.

Conclusions

In conclusion, our study shows that our community has a higher risk of cardiovascular disease due to the predominance of females. The two main dangerous aspects are hypertension and dyslipidemia. For the purpose of implementing the necessary preventative interventions to significantly reduce morbidity and mortality, more investigation is needed to ascertain the reason for this high burden of cardiovascular diseases in females. Investigating our community’s eating practices and lifestyle is also necessary. Non-communicable diseases are disregarded in Pakistan, while communicable diseases receive the majority of healthcare funding. This sad tendency needs to be reversed since non communicable diseases are increasingly being treated like an "epidemic" that, if left unchecked, could create catastrophe and damage future generations. Non communicable diseases will have enormous economic consequences that are costly due to their rising occurrence at younger ages and a lack of tertiary care. This will trap us in a loop of self-defeating behavior that is difficult to escape. We have no choice but to stop it. Therefore, in order to address this issue, we need to create a nationwide awareness initiative.Starting with governmental policy creation, moving on to individual health care providers, the general public, and finally the execution of the policies should be done in a step-by-step fashion. Effective preventative strategies are available to lower the prevalence of these diseases if we are able to address the dangerous aspects sooner.

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