

## Investigating the Causes of Heart Failure in Northern Afghanistan

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www.jrasb.com || Vol. 3 No. 4 (2024): August Issue

Received: 28-07-2024

Revised: 16-08-2024

Accepted: 31-08-2024

### ABSTRACT

Heart failure is a cardiac disorder in which the heart is unable to pump enough blood to other organs. These conditions can be caused by a variety of causes, including cardiovascular disease, high blood pressure, inherited diseases, and other factors. Therefore, early identification of the symptoms of heart failure and its proper treatment is very important in order to prevent its subsequent complications and progression. The aim of this study was to investigate heart failure in patients in northern Afghanistan. The statistical population of this study consisted of all patients referred to public hospitals in the provinces (Balkh, Kunduz, Takhar, Samangan, and Badakhshan).

The statistical sample of the present study consists of (460) patients referred to public hospitals in the northern provinces of Afghanistan. Data were obtained using patients' files and distributing questionnaires to patients. The collected data were entered into SPSS 28 software and then analyzed. The findings showed that out of 460 patients, 130 were referred to Balkh State Hospital, 88 to Kunduz Provincial Hospital, 81 to Takhar Provincial Hospital, 68 to Samangan Provincial Hospital, and 93 to Badakhshan Provincial Hospital. The results showed that among the symptoms of heart failure in patients, the most symptoms were shortness of breath (21%), peripheral edema (16.8%), fatigue and weakness (16.5%), dizziness (14.8%), weight gain (12.2%), heart palpitations (10.2%), and abdominal swelling (8.3%).

**Keywords-** heart disease, shortness of breath, high blood pressure, diabetes, Northern Afghanistan.

### I. INTRODUCTION

Heart failure is a complex and increasingly prevalent clinical syndrome that involves a series of signs and symptoms that characterize heart dysfunction as a physiological circulatory support pump. This disease is a response to heart dysfunction, in which the heart cannot pump blood at the desired volume to meet the body's needs (Estakhri & Zakeri Moghaddam, 2018: 59).

This disease is currently the most common reason for hospitalization in people over 60 years of age. This disease often causes changes in their lifestyle and reduces their quality of life (Shahrbabaki et al., 2011:

610). This disease is a response to heart dysfunction, in which the heart cannot pump blood at the desired volume to meet the body's needs, and in other words, any condition that reduces the ability of the ventricle to meet the body's needs can cause heart failure (Zakeri Moghaddam & Khorrami Estakhri, 2018: 59).

The World Health Organization states that more than 50% of deaths and disabilities due to heart disease and stroke, which together kill more than 12 million people worldwide each year, are considered as major health challenges (Rezaian et al., 2008: 35).

According to the World Health Organization (WHO) data published in 2020, deaths due to heart disease in Afghanistan have reached 40,195 people, or



17.35% of the total deaths. According to the same statistics, Afghanistan is ranked sixth in the world.

In 2018, Kasper conducted a study titled "The Prevalence of Heart Failure in Patients Admitted to a German Hospital." Clinical data were collected and the performance of ICD-based diagnosis in the diagnosis of cardiac failure during the years 2000-2015 was compared with a) advanced definitions based on algorithms that integrate different hospital information system resources, and b) a doctor-based reference standard. The findings showed that estimating the prevalence of heart failure using ICD fertilizers as the only data source had unreliable results. Diagnostic accuracy has been significantly improved by the use of assignment search algorithms.

Peltzer et al. conducted a study titled Cardiovascular Disease among Adults in Afghanistan in 2021. Data were collected from 3945 adults (18-69 years old) who participated in a national survey in 2018 and the data were analyzed. The findings showed that one in ten adults had cardiovascular disease (Peltzer, 2021: 3).

Park et al. conducted a 2021 study titled Association and Liver Fibrosis with Heart Failure and Mortality. In this study, 778739 patients without HF and 7445 patients with HF aged 40 to 80 years who were examined from June 2009 to December 2012 were analyzed. The results showed that hepatic steatosis is associated with cardiac failure and mortality (Park et al., 2021:2).

In 2021, Trump et al. conducted a study titled "The Relationship between Age and Risk Factors with Heart Failure" with the statistical population of 24,675 participants with a history of heart failure, Trump and colleagues divided the population by age group (less than 55 years, 11,599 people), age group (55-64 years, 5,587 people), and age group (65-74 years, 5,190 people). The findings showed that despite the lower

incidence and absolute risk of heart failure among young people compared to older people, the stronger association and greater attributable risk of modifiable risk factors among young participants highlight the importance of preventive efforts throughout adult life (Trump, 2021).

In 2019, Hao conducted a study titled "The Prevalence of Heart Failure and Left Ventricular Dysfunction in China." There were 22,158 participants in this study. The results showed that there was an increase in the prevalence of HF and LV yield was very common in China. However, treatment and control of hypertension in participants with HF was low (Hao, 2019).

Kenchayah et al. (2002) investigated obesity and the risk of heart failure. The sample of findings showed that cardiac failure was recorded in 496 patients (258 females and 238 males). According to the large sample based on the population of the present study, an increase in body mass index was associated with an increased risk of heart failure (Kenchayah et al., 2002: 23).

## II. METHODOLOGY

The present study is an applied descriptive study, the statistical population of this study consists of all patients with heart failure who referred to public hospitals in the Northern Afghanistan during 2023. Data were collected using patients' records and distribution of questionnaires to patients, then entered into SPSS software and then analyzed. The statistical sample of this study (460) was selected by simple random sampling.

### Results and Analysis

**Table (1) Descriptive Statistics of Age and Gender of Patients with Heart Failure**

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	30-40	88	19.13	19.13	19.13
	40-50	100	21.74	21.74	21.74
	50-60	143	31.09	31.09	31.09
	older than 60	129	28.04	28.04	28.04
gender	Man	210	45.6	45.6	45.6
	Female	250	54.4	54.4	54.4

Table (1) shows the descriptive statistics of the participants according to age and gender. The findings show that among (460) people, (210) are males and (250) females, which constitute 45.6% and 54.5% respectively. According to the age category, (88) people

were between the ages of 30 to 40 years, (100) people were between the ages of 40 to 50 years, (143) people were between the ages of 50 to 60 years, and (129) people were older than 60 years.

**Table (2) Descriptive statistics of patients according to the place of referral**

	Frequency	Percent	Valid Percent	Cumulative Percent
Balkh Hospital	130	28.26	28.26	28.26
Kunduz Hospital	88	19.13	19.13	19.13

Takhar Hospital	81	17.61	17.61	17.61
Samangan Hospital	68	14.78	14.78	14.78
Badakhshan Hospital	93	20.22	20.22	20.22
Total	460	100	100	

Table (2) shows the descriptive statistics of the referral of patients referred to the general internal medicine service of the provincial hospitals in the Northern Afghanistan. The findings show that among 460 people, 130 people from Balkh Hospital, 88 people

from Kunduz Hospital, 81 people from Takhar Hospital, 68 people from Samangan Hospital and (93) people from Badakhshan Hospital were referred to the General Internal Affairs Service of the province.

**Table (3) Symptoms of Heart Failure in Patients Referred to the General Internal Medicine Service of Provincial Hospitals**

	Frequency	Percent	Valid Percent	Cumulative Percent
Symptoms	Asthma	98	21.3	21.3
	Lower peripheral edema	77	16.8	16.8
	Weight Gain	56	12.2	12.2
	Ganges	68	14.8	14.8
	Fatigue and weakness	76	16.5	16.5
	Swelling in the abdomen	38	8.3	8.3
	heartbeat	47	10.2	10.2
	Total	460	100	100

Table (3) shows the symptoms of cardiac failure in patients referred to the general internal medicine service of provincial hospitals. The findings showed that among 460 people, 98 people had symptoms of shortness of breath, 77 people had symptoms of

peripheral asthma, 56 people had symptoms of weight gain, 68 people had symptoms of gangsititis, 76 people had fatigue and weakness, 38 people had swelling in the abdominal region and (47) people had symptoms of heart palpitations.

**Table (4) Factors of Heart Failure in Patients Referred to the General Internal Medicine Service of Provincial Hospitals**

	Frequency	Percent	Valid Percent	Cumulative Percent
Causes of cardiac failure	heart attack	84	84	84
	Hypertension	92	92	92
	emphysema	64	64	64
	diabetes	37	37	37
	HIV	66	66	66
	severe anemia	49	49	49
	drug use	68	68	68
	Total	460	100	100

Table (4) shows the descriptive statistics of cardiac failure among patients referred to the general internal medicine service of the provincial hospitals in the Northern Afghanistan. The findings showed that among the causes of heart failure among patients referred to provincial hospitals were (94) hypertension, (84) heart attack, (68) drug use, (66) HIV, (64) amyphhism, (49) severe anemia and (37) diabetes, respectively.

**Findings**

The findings of the descriptive statistics regarding the age of the patients showed that among them, (460) people, (88) people were between the ages of 30-40 years, (100) people were between the ages of

40-50 years, (143) people were between the ages of 50-60 years, and (129) people were older than 60 years old. Among them, (210) males and (250) females have been reported, which constitute 46% and 54% based on percentages, respectively.

The findings showed that out of 460 patients, 130 were referred to Balkh State Hospital, 88 to Kunduz Provincial Hospital, 81 to Takhar Provincial Hospital, 68 to Samangan Provincial Hospital, and 93 to Badakhshan Provincial Hospital. The results showed that among the symptoms of heart failure in patients, the most symptoms were shortness of breath (21%), peripheral edema (16.8%), fatigue and weakness (16.5%), dizziness



(14.8%), weight gain (12.2%), heart palpitations (10.2%), and abdominal swelling (8.3%).

The statistical population of this study consisted of all patients referred to public hospitals in the provinces (Balkh, Kunduz, Takhar, Samangan, and Badakhshan).

### III. CONCLUSION

Cardiac failure is a cardiac disorder in which the heart is unable to pump enough blood to other organs. These conditions can be caused by a variety of reasons, including cardiovascular disease, high blood pressure, hereditary diseases, and other medical factors. Therefore, this study was conducted to investigate the symptoms of cardiac failure in patients referred to public hospitals in Northern Afghanistan.

The symptoms of heart failure are very varied and widespread, and can gradually worsen and affect the patient's daily life. These symptoms include shortness of breath, swelling of the extremities, fatigue and weakness, coughing and wheezing, loss of appetite and weight, and arrhythmias (irregular heartbeats). Shortness of breath is one of the most common and first symptoms of heart failure, caused by the inability of the heart to pump enough blood to the lungs. Swelling of the body also occurs due to the accumulation of fluid in the cells due to the inefficiency of the heart's pumping function. Fatigue and weakness are also caused by reduced blood flow to the body's tissues. Early identification of these symptoms and their proper treatment is very important to prevent the progression of the disease and subsequent complications.

In conclusion, this study provides important information regarding the diagnosis of heart failure in Northern Afghanistan, highlighting the importance of early diagnosis and intervention. By understanding the nature of this problem, healthcare providers and policymakers can develop effective strategies for the prevention, early diagnosis, and treatment of heart failure. This study provides the basis for improving cardiovascular health outcomes in the region and demonstrates the need for efforts to address this important public health problem.

The findings of this study have important proposal for healthcare in northern Afghanistan:

1. **Early Detection:** There is a pressing need to enhance awareness among both the public and healthcare providers about the early signs and symptoms of heart failure. This knowledge can lead to earlier diagnoses and more timely interventions.
2. **Comprehensive Care:** Given the diverse causes of cardiac insufficiency, a multidisciplinary approach to patient care is essential. This should involve cardiologists, general practitioners, nutritionists, and other relevant specialists.
3. **Patient Education:** Developing educational programs to help patients recognize symptoms and

understand the importance of adherence to treatment plans could significantly improve outcomes.

4. **Healthcare System Preparedness:** Public hospitals in Northern Afghanistan need to be equipped with the necessary resources and trained personnel to effectively diagnose and manage cardiac insufficiency cases.
5. **Preventive Strategies:** Implementing public health measures to address modifiable risk factors such as hypertension, obesity, and smoking could help reduce the incidence of heart failure in the region.
6. **Research Continuity:** Further studies are needed to explore the unique genetic, environmental, and lifestyle factors that may contribute to the prevalence of cardiac insufficiency in Northern Afghanistan.

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