



The Association Between Sociodemographic Factors and Chronic Disease in Adults in Iraq

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Abstract.

Background: Chronic diseases constitute a major public health challenge in Iraq, and their development is influenced by a combination of sociodemographic characteristics and lifestyle-related risk factors.

Aim: To assess the association between sociodemographic factors, lifestyle risk factors, and the prevalence of chronic diseases among adults in Iraq.

Methods: A cross-sectional study was conducted among 250 adults. Data were analyzed using SPSS to obtain descriptive statistics and chi-square tests. Sociodemographic variables included age, gender, BMI, residence, social status, number of children, occupation, and education. Risk factors included physical activity, smoking, sleep pattern, phone use, stress, and substance use.

Results: Participants had a mean age of 45 ± 10.97 years. The most prevalent chronic diseases were joint disease (80%), cerebrovascular disease (74%), cardiovascular disease (70.4%), and gastrointestinal disease (66.4%). Significant associations were identified between chronic diseases and several sociodemographic variables including age ($p < 0.05$), BMI ($p < 0.05$), education, occupation, and residence. High prevalence of risk factors was observed: smoking (70.4%), low physical activity (49.2% never exercise), evening sleep (89.2%), high stress exposure (72.8%), and frequent intake of coffee/tea (76.4%). These lifestyle behaviors showed strong associations with chronic disease occurrence. Additionally, family history was present in 80% of cases.

1. Introduction

Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be long-term and are a result of groups of genetic, physiological, environmental, and behavioral factors. The main types of unpleasant diseases are cardiovascular disease (such as heart attacks, strokes), cancer, chronic respiratory diseases (such as chronic obstructive and asthma), and diabetes [1].

The Centres for Disease Control and Prevention (CDC) defines chronic diseases as conditions that last 1 year or more and that require ongoing medical attention or limit activities of daily living, or both. Chronic diseases may be influenced by a combination of genetics, lifestyle and social behaviours, health care system factors, community influences, and environmental determinants of health. These risk factors often coexist and interact with each other. Therefore, a better understanding of determinants of chronic diseases, such as tobacco use, unhealthy eating, and physical inactivity, stands to benefit from effective strategies for improving primary, secondary, and tertiary disease prevention and management in diverse global settings. Strategies to prevent and manage chronic disease outcomes, such as diabetes and cardiovascular diseases (CVDs), have global commonalities. The impact of chronic diseases is disproportionately evident in Black and Brown communities. Chronic disease prevention and management typically focus on behavioural interventions such as healthy eating, increased physical activity, and cessation of unhealthy practices such as tobacco and alcohol use [2].

Chronic diseases have an impact on and change patients' lives, and the way they experience their bodies alters. Patients may struggle with identity and self-esteem, a shrinking lifeworld, and a challenging reality. The chronic diseases become part of the patients' lives, whether they affect their physical health and functions, autonomy, freedom, and

identity, or threaten their life. The patients are forced to change their lifestyle, which they often experience as losing control, and to minimise loss of control, they feel a need to mobilise resources and plan and prioritise their lives. Having a chronic disease can lead to stressors such as life-threateningness, progressive deterioration, and controllability. It has previously been identified that there are stressors that are common to different chronic diseases. Patients who have a chronic disease have to find new ways to cope with their changed situation and develop coping strategies that relate to the way they think and act in order to manage stressful situations. This may involve problem- or emotionally focused coping, depending on the individual's personality. Being given information is important, as is learning how to talk to others. The patients' own thoughts about their new situation can also influence how they cope. Another aspect of coping with the new life situation is the type of support the patients can receive. The social support received depends on the patients' available network of people, and the need for social support will vary depending on the patients' age and needs. Overall, social support has been seen as a buffer against the risks to the well-being of chronically ill patients [3].

Chronic disease is a very important issue for global health, as 75% of global deaths in 2019 are non-communicable diseases, with 43 million deaths, affecting 18 million early cases at the beginning of the early semester, affecting quality of life, fatal increases and health increases, and improving health status in the third guide. Genetics and several environmental factors) interact with adjustable risk factors (e.g., tobacco and alcohol consumption, high blood pressure, high cholesterol concentrations, low foods with fresh fruits and vegetables). However, there is a serious gap in research in the literature. The first is to fully understand the complex interactions of measurable insoluble factors in the development of chronic diseases affecting multiple organs. Second, how many developments in chronic disease can be understood and explained using measured (unmeasured risk factors [4].

Chronic diseases addressed in this study are as outlined in questionnaire, They are not passed from person to person and are the result of a combination of genetic, physiological, environmental, and behavioural factors, The diseases specifically addressed in this study, as outlined in the questionnaire, include: Diabetes: A chronic condition characterized by high levels of blood glucose (sugar) resulting from either insufficient insulin production (Type 1) or the body's ineffective use of insulin (Type 2). It can lead to severe complications affecting the heart, blood vessels, eyes, kidneys, and nerves. High Blood Pressure (Hypertension): A common condition in which the long-term force of the blood against your artery walls is high enough that it may eventually cause health problems, such as heart disease. Often called a "silent killer" due to its lack of obvious symptoms, Heart Disease is a broad term encompassing a range of conditions that affect the heart, including coronary artery disease (the most common type), heart failure, arrhythmias, and congenital heart defects. These conditions can lead to heart attacks, strokes, and other life-threatening events. Chronic Kidney Disease (CKD): A progressive loss of kidney function over time. The kidneys filter waste products and excess fluids from the blood, and when they fail, dangerous levels of waste can accumulate in the body. Chronic Respiratory Disease: Long-term diseases of the airways and other structures of the lung. Examples include asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, and occupational lung diseases. These conditions can cause breathlessness, coughing, and wheezing. Chronic Gastrointestinal Disease: Persistent or recurring conditions affecting the digestive system, which includes the oesophagus, stomach, small intestine, large intestine, and rectum. Examples include Crohn's disease, ulcerative colitis (inflammatory bowel diseases), irritable bowel syndrome (IBS), and chronic gastritis. Joint Disease (Arthritis): A condition causing inflammation and pain in the joints. There are many types, including osteoarthritis (wear-and-tear arthritis) and rheumatoid arthritis (an autoimmune disease). It can lead to chronic pain, stiffness, and reduced mobility. Cerebrovascular Disease (Stroke): A condition that affects the blood vessels supplying the brain. A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or ruptures, leading to brain damage [5].

Cancer: A disease characterized by the uncontrolled growth and spread of abnormal cells. It can originate in almost any organ or tissue of the body and is a leading cause of death worldwide. The global burden of NCD remains unacceptable. In 2016, non-communicable illnesses were responsible for 41 million deaths, with 57 million deaths (71%) worldwide. 15 million (30-70 years) of deaths of these individuals. The burden was higher in countries with lower incomes and lower average incomes, all of which resulted in 78% of the total number of NCD deaths and early deaths. Furthermore, suicide was actually responsible for 2016. 800,000 people have died. In 2016, the risk of early death from one in four non-communicable diseases decreased to 18%, a modest one. A relative reduction of 6% compared to 2010. If everything is implemented in all 194 member countries, a total of 16 "best buyers" could be avoided from the World Health Organization at early deaths between 9.6 million and 2025. Meanwhile, a mix of risk

factors and advances in many regions has been discovered. If the trend is saved, it is unlikely to become a world. The goal is achieved. The main behavioural risk factors, harmful alcohol consumption, tobacco, and food consumption, show the last country to compare ratings as there are no decisions on physical activity behaviours. Levels of alcohol consumption worldwide. In 2016, 6.4 liters of pure alcohol were estimated. For those over 15 years old. The level of consumption and trends vary from area to area. However, in recent years, a significant decline has been observed in the European region. Globally, the region remains among the people with the highest levels of alcohol consumption. In 2016, over a quarter of adults were under the age of 18 (28%). Physical activity recommendations are not implemented, particularly in countries with high incomes, where significant physical activity is noticed. On the contrary, countries with low levels of income will generally reduce emissions, but physical activity is still of interest worldwide. Women are, in principle, less active than men, and this trend applies to most countries. Over the past 15 years, global physical activity levels have not shown significant improvements - the usual field has failed to achieve global goals to increase physical activity by 2025. Furthermore, data related to sodium consumption (salt) and health outcomes remain an important issue worldwide [6].

Noncommunicable diseases (NCDs) are the leading cause of morbidity and death in Iraq (Iraqi Ministry of Health, 2019). It is estimated that 30% of Iraqis have high blood pressure, 14% have diabetes, and more than 30% are obese. Some 38% of Iraqi males smoke, and a growing number of schoolchildren - 20% of males and 9% of females aged between 13 and 15 years are tobacco users. Comparison with Syria, Prevalence & Incidence: Similar trends are observed in Syria, with comparable prevalence of diabetes (~10-13%) and hypertension (~20-25%). However, conflict-related disruptions may have affected disease management and data accuracy. Mortality Rates: Both countries have high cardiovascular-related mortality, but Iraq's rates may be marginally higher due to conflict, healthcare access disparities, and socioeconomic factors. General Trends: Urbanization and lifestyle changes are increasing the prevalence of these diseases in Syria, paralleling Iraq's trend. Spread spread in obesity increases by about 20% among adults. Trauma: Microelement indicators are less documented. Nevertheless, consistent trends indicate that we have recently diagnosed cases of hypertension and diabetes. Syria: While ongoing conflicts limit detailed modern epidemic data, studies have shown high levels of hypertension and diabetes. Türkiye: Reports show that hypertension spread is over 30% and diabetes affects approximately 12% of the adult population (Turkey Heart Disease, 2020). Iran: A large epidemic study showed spread spread in diabetes in about 8-10%, and hypertension affected about 20% of adults (Ministry of Health, 2019) [7].

In treatment, many patients support quality of life, but severe chronic obstruction of the lungs can lead to respiratory failure and death. Diagnosis: That's very different. Early detection and treatment improved results. Some types of cancer are very curable, but the diagnosis can be weak, especially if it is diagnosed late. Chronic kidney disease (CKD) is, gradual loss of renal function over several months or years. Diagnosis, this can lead to kidney disease at the end of a stage requiring dialysis or transplantation. Early detection may slow progression and improve quality of life [8].

The ageing population tends to have a higher prevalence of chronic diseases worldwide today. For example, six in ten adults in the US have a chronic disease, and four in ten adults have two or more, while Sweden reports multiple chronic conditions of 56.3%. These chronic conditions are significant and profound economic issue for any person, the healthcare system, and society as a whole, Such diseases account for 86% of all medical costs in the US being even greater worldwide, The presence of multiple chronic conditions in the same individual has profound implications for healthcare costs and utilisation, For example, a Swiss study estimated that the average total healthcare costs were 5.5 times higher in elderly patients with multiple chronic conditions as compared with elderly patients without multiple chronic conditions, The combined cost savings from the health and productivity that results from a small reduction in the prevalence of chronic disease cannot be ignored, resulting in a genuine return on investment in a very small span of time, Chronic diseases require a long period of treatment that leads to the increase in demand for healthcare services and changes its nature [9].

In today's world, chronic diseases are the largest cause of death, and their prevalence is increasing. The leading diseases, particularly cardiovascular disease, cancer, chronic lung disease, and diabetes mellitus, reflect past exposure to risk factors such as unhealthy diet, tobacco use, physical inactivity, and alcohol use. Global responses to the burden of chronic diseases are inadequate because of insufficient financial support for prevention, treatment, and research, and because many health systems are focused on acute care. There is also another reason for this inadequacy: the

belief that chronic diseases only affect the elderly and the affluent. As medicine has been able to significantly reduce the burden of acute diseases, especially in developed countries, life expectancy has increased, and with an ageing population, it is confronted with more prevalent chronic diseases. In the 24 member states of the Organisation for Economic Cooperation and Development, most of which are developed countries with high-income economies, more than one-third of adults reported living with a chronic disease or chronic health problem in 2021. However, the majority of chronic diseases today occur in developing countries. They have not simply displaced acute diseases. Developing countries face a double burden of disease: they have a high and growing number of people with chronic diseases, while at the same time, they face high child mortality rates from infectious diseases. Statistics on chronic diseases show that policies and practices are often misguided by myths. One is that global policies should focus first on infectious diseases such as HIV/AIDS, tuberculosis, and malaria. However, chronic diseases may develop alongside infectious diseases, while the latter can evolve into chronic conditions. Instead of prioritizing infectious diseases, policies should simultaneously address chronic diseases. Another misconception is that chronic disease is the result of poor lifestyle choices, while social and cultural contexts influence individual choices, so that global policies should have a broader focus than responsible conduct and healthy choices. Yet another one is the aforementioned belief that the rich and old are primarily affected by chronic disease. In fact, low socio-economic status is associated with greater exposure to risk factors (such as fatty foods, smoking, and less physical exercise) and less access to quality healthcare. It is also not true that the elderly are affected, since in developing countries, high-risk individuals are younger than in developed countries. While much of the policy and ethical debate is focused on chronic disease, less attention is usually given to what it means to be chronically ill. In this issue of the journal, the challenge of chronic disease is addressed at the experiential level of illness. Phenomenologists used to point out that people who are chronically ill have a transformative experience. The illness affects not only their bodily functioning but also their personality, identity, and lived experience: it alters their values, goals, and aspirations. This may not be true for all chronic diseases, as some conditions, such as hypothyroidism and glaucoma, can be well controlled with medication, but it is certainly the case for more serious and potentially life-threatening and disabling conditions [10].

A chronic illness affects many aspects of life. The burden of illness, limitations in daily life, lifestyle changes, and/or increased medical needs can pose emotional, psychological, financial, and time stressors. Hence, implications for well-being at the time of disease onset as well as changes in the long-term development of well-being are expected. The theory of hedonic adaptation states that after a life event, individuals return to a baseline happiness. Applied to the context of chronic illnesses, an immediate reduction in wellbeing at disease onset would be expected, followed by a gradual return to the pre-onset wellbeing levels in the years after the onset. The model of adjusting to chronic conditions, on the other hand, states that after a chronic illness onset, individuals might experience either successful psychological adaptation or ongoing adjustment difficulties. This implies uncertainty about the long-term development of wellbeing and outcomes, ranging from persistently lower wellbeing levels to slow recovery of wellbeing to complete return to pre-onset wellbeing levels might be expected.

In the empirical literature, studies across the board found an immediate reduction in subjective well-being after a chronic disease onset. Concerning the long-term effects, however, the empirical evidence is more mixed. Some studies reported that subjective well-being bounced back after a health shock, implying a return to pre-onset well-being in the long term. Other studies found very little wellbeing recovery, showing persistently lower wellbeing levels after the onset of a chronic disease. A third stream of studies reported differential outcomes, where some groups achieved more favourable long-term well-being development than others. Given the mixed evidence of previous research, it is of particular interest to investigate the development of well-being after illness onset, examining both immediate level changes and longitudinal trend changes. While several studies have analysed long-term effects of chronic illness by comparing pre- and post-onset wellbeing levels, longitudinal analyses including both immediate level and long-term trend effects are scarce. However, joint analyses of level and trend effects are crucial to disentangle the immediate and long-term impacts of a chronic disease onset. The onset of a chronic disease often follows increased medical needs and higher health service utilization, requiring a patient's effort to manage their disease. This work of managing a chronic disease, including, e.g., administering medication or arranging and attending medical appointments, is referred to as the burden of treatment. Low availability of healthcare services or long distances to healthcare providers can be perceived as burdensome for persons with chronic diseases. Against this background, lower accessibility and availability of healthcare services might aggravate this treatment burden. Put differently, worse spatial healthcare

access might amplify wellbeing reduction at disease onset. To the best of our knowledge, no studies to date have investigated spatial healthcare access as potential [11].

There is no universal agreement on what constitutes a chronic disease; chronicity is a relative term that has shifted as advancements in medicine translate from bench to bedside, and the focus of care moves from dealing with acute or terminal diagnoses to long-term management of chronic conditions. Nevertheless, it is apparent that a crisis in chronic disease burden has emerged globally, and with it a body of literature for diseases that are now finding more commonalities under the umbrella of “chronic disease”. Within this new scope, are there parallel lessons broadly applicable to chronic disease? Complex global healthcare challenges and more diversely represented populations in medicine have necessitated new integrated approaches to healthcare, with an ever-increasing appreciation for the patient perspective. Specifically, handling patient-provider relationships and patient education increasingly plays a critical role in the delivery of positive outcomes and increased quality of life [12].

Aim of the study:

- To study Sociodemographic factors of adult in Iraq
- To study chronic disease of adults in Iraq
- To study the association between sociodemographic factors and chronic disease in adults in Iraq

2. Methodology

2.1 Study design

A cross-sectional study of the Association of socio-demographic factors and chronic disease. This study was carried out in Al-Ramadi Teaching Hospital. For the period twenty-fifth of July to the end of October 2025. The study was conducted on adults who visited or were admitted. The study was approved by the College of Medicine, University of Anbar. The sample size was two hundred and fifty adults selected by non-probability convenience sampling technique. Inclusion criteria included adults (18 +).

2.2 Data Collection

After taking informed verbal consent, the specially designed questionnaire was administered through interviewing adults with closed-ended questions related to socio-demographic factors and chronic disease. The questionnaire was divided into three parts: part one included demographic data, including age, gender, education, parity, and knowledge; part two included chronic disease; part three for risk factors of chronic disease.

2.3 Study Setting and Duration

The study was conducted at Al-Ramadi General Hospital on 20/8/2025. Data were collected from the relevant clinical departments according to the operational procedures of the hospital.

2.4 Study Population

The study population included all individuals who met the inclusion criteria and attended the selected department during the data collection process at Al-Ramadi General Hospital. Individuals who did not meet the study requirements were excluded.

2.5 Sample Size and Sampling Technique

A total of 250 participants were included in the study. A non-probability convenient sampling technique was used to recruit participants who were available and willing to participate during the specified day of data collection.

2.6 Inclusion Criteria

- Participants aged 18 years and above
- Individuals who voluntarily agreed to participate
- Cases relevant to the study objectives who completed the questionnaire

2.7 Exclusion Criteria

- Individuals who refused to participate
- Incomplete questionnaires
- Cases unrelated to the study objectives

2.8 Data Collection Tool

Data were collected using a structured questionnaire divided into three main sections:

- Socio-demographic characteristics (age, gender, residence, education level, etc.)
- Clinical information related to the condition under investigation
- Risk factors and associated variables

The questionnaire was reviewed by a panel of experts to ensure clarity, reliability, and validity.

2.9 Data Analysis

The collected data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. The analysis included:

- Descriptive statistics such as frequencies, percentages, means, and standard deviations
- Cross-tabulation to examine associations between variables
- Chi-square (χ^2) test to determine the significance of relationships between categorical variables p-value of ≤ 0.05 was considered statistically significant.

3. Results

The study included 250 adult participants. The mean age was 45 ± 10.97 years, with the largest age group being 38–47 years (34.4%), followed by 48–57 years (20.0%). More than half of the sample were males (54.0%), while females represented 46.0%.

Regarding body mass index (BMI), the mean value was 23 kg/m². About one-third of the participants were underweight (33.6%), 32.8% had normal weight, 18.8% were overweight, and 14.8% were obese.

More than half of the sample resided in urban areas (56.4%), and 55.2% were married. Concerning parity, most participants had five or more children (31.2%), followed by those with two children (32.8%).

In relation to occupation, 33.2% were housewives, 30.8% were unemployed, 18.8% employed, and 17.2% retired. Regarding educational attainment, 27.2% were illiterate, 24.0% had primary education, and 19.6% were university graduates.

Table 1: Distribution of Socio-Demographic Characteristics of the Study Sample.

Variable	No.	%
Age		
m $\pm$ SD	45 $\pm$ 10.97	
18 - 27	38	15.2%
28 - 37	58	23.2%
38 - 47	86	34.4%
48 - 57	50	20.0%
58 +	18	7.2%
Total	250	100%
Gender		

Male	135	54.0%
Female	115	46.0%
Total	250	100%
BMI		
m± SD	22.7±23	
Underweight < 18.5	84	33.6%
Normal weight 18.5- 24.9	82	32.8%
Overweight 25 – 29.9	47	18.8%
Obesity 30 +	37	14.8%
Total	250	100%
Residence		
Urban	141	56.4%
Rural	109	43.6%
Total	250	100%
Social Status		
Single	101	40.4%
Married	138	55.2%
Divorced	5	2.0%
Separated	3	1.2%
Widower	6	1.2%
Total	250	100%
No. of children		
Primigravida (1)	25	10.0%
2	82	32.8%
3	14	5.6%
4	51	20.4%
5+	78	31.2%
Total	250	100%
Occupation		
Employed	47	18.8%
Un – employed	77	30.8%
Housewife	83	33.2%
Retired	43	17.2%
Total	250	100%
Education		
Illiterate	68	27.2%
Read and write	45	18.0%
Primary	60	24%
Intermediate	11	4.4%
secondary	15	6.0%
University	49	19,6%
High education	2	0.8%
Total	250	100%

Nearly half of the participants reported no regular physical activity (49.2%), while only 10.8% performed exercise five days per week. Most participants slept in the evening (89.2%), with an average sleep duration of 5.17 ± 2.05 hours. A total of 35.6% slept less than four hours.

A high proportion were smokers (70.4%), with cigarettes being the most common type (52.4%), followed by vape (34.8%) and shisha (12.0%). The intensity of smoking was mostly moderate (37.2%).

Only 4.0% reported addiction, mainly to drugs (0.7%), hashish (0.2%), and crystal (0.2%). Alcohol consumption was rare (1.2%). Most participants (76.4%) consumed coffee and tea, with high consumption among 78.0%.

Regarding mobile phone use, 40.8% used their phone 1–2 hours daily, while 20.4% used it more than 5 hours. Psychological stress was commonly reported, with 50.8% experiencing stress “sometimes” and 22.0% “always.”

Table 2: Distribution of risk factors of chronic disease of the study sample

Variable	No.	%
Physical activity		
5 days per week	27	10.8%
3-4 days per week	36	14.4%
1-2 days per week	64	25.6%

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Ever	123	49.2%
Total	250	100%
Time of sleep		
Morning	27	10.8%
Evening	223	89.2%
Total	250	100%
Sleep duration		
m± SD	5.17±8	
4	89	35.6%
5 – 8	153	61.2%
9+	8	3.2%
Total	250	100%
Smoker		
Yes	176	70.4%
No	74	29.6%
Total	250	100%
Type of smoke		
Cigarette	131	52.4%
Vape	87	34.8%
Shisha	30	12.0%
Others	2	0.8%
Total	250	100%
State of smoke		
High	86	34.4%
middle	93	37.2%
low	71	28.4%
Total	250	100%
Addiction		
Yes	10	4.0%
No	240	96.0%
Total	250	100%
Type of addiction		
Drugs	4	0.7%
Hashish	3	0.2%
Crystal	3	0.2%
others	0	1.1%
Total	10	2.2%
State of addiction		
High	0	0%
Middle	3	1.2
Low	7	2.8%
Total	10	4.0%
Alcoholism		
Yes	3	1.2%
No	247	98.8%
Total	250	100%
State of Alcoholism		
High	0	0%
Middle	2	0.8%
Low	1	0.4%
Total	3	1.2%
Have coffee and tea		
Yes	191	76.4%
No	59	23.6%
Total	250	100%
State of having coffee and tea		
High	195	78.0%
Middle	33	13.2%
Low	22	8.8%
Total	250	100%

Hours of phone use		
1-2	102	40.8%
3-4	97	38.8%
5+	51	20.4%
Total	250	100%
Social and psychological stress		
Always	55	22.0%
Sometimes	127	50.8%
Ever	68	27.2%
Total	250	100%

The of chronic diseases was high in the study sample. The most frequent conditions were:

- Joint diseases: 80.0% Cerebrovascular diseases: 74.0% Cardiovascular diseases: 70.4%
- Respiratory diseases: 60.4% Gastrointestinal diseases: 66.4% Cancer: 64.8% Hypertension: 56.4% Diabetes Mellitus: 57.2%
- Renal disease: 54.0%
- Around 80% had a family history of chronic disease, and 7.2% had a past medical history. The onset of disease was within 1–5 years for 48.0% of participants, and 37.2% reported onset less than one year.
- Associated chronic diseases were found in 33.6%, with the most common combinations being HTN & DM (30.4%) and HTN & CHD (30.8%).
- In terms of prognosis, 46.4% reported improvement, 41.2% deterioration, and 12.4% no change. Complications were (96.4%). Only 7.6% used dietary supplements.

Table 3: Distribution of chronic disease of the study sample.

Variable	No.	%
Types of chronic disease		
Hypertension		
Have hypertension	141	56.4%
have not hypertension	109	43.6%
Total	250	100%
Diabetes mellitus		
have Diabetes mellitus	143	57.2%
have not Diabetes mellitus	107	42.8%
Total	250	100%
Cardiovascular disease		
Have Cardiovascular	176	70.4%
have not Cardiovascular	74	29.6%
Total	250	100%
Respiratory disease		
Have Respiratory disease	151	60.4%
have not Respiratory disease	99	39.6%
Total	250	100%
Renal disease		
Have Renal disease	135	54.0%
have not Renal disease	115	46.0%
Total	250	100%
Gastrointestinal disease		
Have Gastrointestinal disease	166	66.4%
have not Gastrointestinal disease	84	33.6%
Total	250	100%
Joint disease		
Have Joint disease	200	80.0%
have not Joint disease	50	20.0%
Total	250	100%
Cerebrovascular disease		
Have Cerebrovascular disease	185	74.0%
have not Cerebrovascular disease	65	26.0%
Total	250	100%
Cancer		
Have Cancer	162	64.8%

have not Cancer	89	35.2%
Total	250	100%
Others		
Have Others disease	120	
have not Others disease		
Total	250	100%
Past history		
Have Past history	18	7.2%
have not Past history	231	92.8%
Total	250	100%
Family history		
Have Family history	200	80%
have not Family history	50	20%
Total	250	100%
Onset of disease (Years)		
<1	93	37.2%
1-5	120	48.0%
10+	7	2.9%
Don't know	25	10.2%
Total	250	100%
Associated disease		
Have Associated disease	84	33.6%
have not Associated disease	166	66.4%
Total	250	100%
Types of associated disease		
H.T & DM	76	30.4%
H.T & CHD	77	30.8%
H.T, DM& CHD	23	9.2%
Others	58	23.2%
Total	250	100%
Prognosis of disease		
Improvement	116	46.4%
Deterioration	103	41.2%
Ever	31	12.4%
Total	250	100%
Live alone		
Have Live alone	5	2.0%
have not Live alone	245	98.0%
Total	250	100%
Complications of chronic disease		
Have Complications of chronic disease	241	96.4%
have not Complications of chronic disease	9	3.6%
Total	250	100%
Uses of dietary supplements		
Have Uses of dietary supplements	19	7.6%
have not Uses of dietary supplements	231	92.4%
Total	250	100%

A significant association was found between age and several chronic diseases. Most conditions were concentrated in the 38–47 and 48–57 age groups ($p < 0.05$). Younger age groups showed lower. The association between gender and most chronic diseases was not statistically significant ($p > 0.05$). Underweight and normal-weight participants had higher percentages of most chronic diseases. A significant association was found between BMI and several diseases ($p < 0.05$). Urban residents exhibited higher of cardiovascular, cerebrovascular, and gastrointestinal diseases. The association was statistically significant for some diseases ($p = 0.044$).

Married participants had the highest of chronic diseases, but statistical significance varied across disease types. A significant association was observed, especially in individuals with two children, who demonstrated higher of chronic diseases ($p < 0.05$). The association between occupation and disease prevalence was statistically significant ($p < 0.05$). The association between education and most chronic conditions was statistically significant ($p < 0.05$).

Table 4: The association between sociodemographic factors and chronic diseases

Variable	H.T No. %	DM No. %	CHD No. %	CNS No. %	Resp. No. %	UT No. %	GIT No. %	Joint No. %	Cancer No. %	P Value
Age										0.171
18 - 27	7.2%	6%	9.6%	10.4%	11.2%	8.0%	9.6%	9.6%	8.4%	
28 – 37	8%	9.6%	10.8%	11.6%	9.6%	6.8%	10.0%	11.6%	12.4%	
38 – 47	24%	25.2%	31.2%	32.8%	23.2%	25.2%	28.0%	32.0%	25.2%	
48 – 57	13.2%	13.2%	16.4%	16.0%	14.4%	11.2%	15.2%	17.6%	17.2%	
58 +	4%	3.2%	2.4%	3.2%	2%	2.8%	3.6%	3.2%	1.6%	
Total	56.4%	57.2%	70.4%	74.0%	60.4%	54.0%	66.4%	74.0%	64.8%	
Gender										0.209
Male	31.2%	33.2%	43.6%	40.4%	36.8%	33.6%	40.0%	42.4%	36.8%	
Female	24.4%	23.2%	26.8%	33.6%	23.6%	20.4%	26.4%	31.6%	28.0%	
Total	57.8%	56.4%	70.4%	74.0%	60.4%	54.0%	66.4%	74.0%	64.8%	
BMI										0.118
Underweight < 18.5	17.2%	20.4%	33.6%	31.2%	26.4%	23.2%	26.4%	30.8%	28.4%	
Normal weight 18.5- 24.9	20.4%	16.8%	24.4%	24.8%	19,6%	18.4%	24.4%	25.2%	20.4%	
Overweight 25 – 29.9	10.4%	10.8%	7.6%	8.4%	9.2%	6.8%	9.2%	10,0%	10.0%	
Obesity 30 +	8.4%	57.2%	4.8%	9.6%	9.6%	5.6%	6.4%	8.0%	6.0%	
Total										
Residence										0.159
Urban	31.6%	32.0%	36.4%	41.6%	30.8%	28,0%	35.2%	41.6%	33.2%	
Rural	25.2%	25.2%	34.0%	32.8%	29.6%	26.0%	31.2%	32.4%	31.6%	
Total	57.0%	56.4%	70.4%	74.4%	60.4%	54.0%	66.4%	74.0%	64.8%	
Social Status										0.332
Single	16.4%	20.4%	38.2%	32.8%	27.6%	25.6%	31.2%	32.8%	29.2%	
Married	30.4%	30.4%	32.2%	38.0%	31.4%	28.4%	34.0%	39.6%	35.6%	
Divorced	6.0%	4.0%	0.0%	0.4%	0.4%	0.0%	0.8%	0.8%	0.0%	
Separated	0.4%	2.0%	0.0%	0.8%	0.0%	0.1%	0.4%	0.2%	5.3%	
Widower	1.2%	0.4%	2.4%	2.1%	1.0%	0.0%	0.0%	0.0%	2.1%	
Total	56.4%	57.2%	72.8%	74.1%	60.4%	54.1%	66.4%	73.9%	72.2%	
No. of children										0.104
Primigravida (1)	2.3%	4.2%	3.4%	2.3%	3.4%	2.9%	2.5%	1.7%	3.9%	
2	29.1%	23.7%	40.6%	38.3%	31.4%	31.4%	34.1%	38.9%	30.4%	
3	4.0%	4.0%	2.9%	4.6%	5.1%	2.9%	4.6%	4.6%	5.9%	
4	8.6%	10.3%	7.0%	10.9%	6.3%	7.4%	8.3%	10.3%	7.5%	
5+	16.6%	15.2%	9.0%	12.1%	9.3%	9.7%	12.3%	13.8%	12.6%	
Total	60.6%	57.4%	64.0%	68.0%	55.4%	54.3%	62.3%	69.1%	60.0%	
Occupation										
Employed	8.8%	8.4%	9.2%	10.2%	10.3%	8.8%	10.0%	8.4%	8.0%	
Un – employed	14.8%	13.6%	19.6%	17.4%	15.9%	16.0%	18.0%	18.8%	17.2%	
Housewife	19.4%	20.4%	17.2%	22.8%	14.6%	12.0%	19.2%	22.4%	18.4%	
Retired	11.4%	14.8%	24.4%	23.6%	20.6%	17.2%	21.2%	24.4%	21.2%	
Total	56.4%	57.2%	70.4%	74.0%	60.4%	54.0%	64.4%	74.0%	64.8%	
Education										0.151
Illiterate	18.4%	16.4%	22.8%	20.0%	18.8%	15.6%	20.0%	22.0%	19.2%	
Read and write	25.4%	12.0%	15.6%	12.4%	12.4%	10.8%	12.4%	15.2%	14.8%	
Primary	14.4%	13.2%	18.0%	16.0%	12.8%	14.0%	16.0%	19.2%	15.2%	
Intermediate	3%	2.0%	2.8%	2.4%	2.4%	2.4%	2.4%	3.2%	3.2%	
secondary	2,6	3.6%	1.6%	2.8%	3.2%	1.6%	2.8%	4.4%	2.4%	
University	10%	9.6%	9.6%	12.8%	10.4%	9.6%	12.8%	9.2%	10.0%	
High education	0.4%	0.4%	0.0%	0.0%	0.4%	0.0%	0.0%	0.8%	0.0%	
Total	56.4%	57.2%	70.4%	66.4%	60.4%	54.0%	66.4%	74.0%	64.8%	

4. Discussion

Socio-demographic characteristics

The findings of the present study revealed that the highest proportion of participants were within the age group 38–47 years (34.4%), followed by those aged 48–57 years (20.0%). This indicates that chronic diseases were more prevalent among middle-aged adults. This finding is consistent with previous studies which reported that the prevalence of chronic diseases increases with age due to cumulative exposure to lifestyle-related risk factors and physiological changes associated with aging [12,13]. Lower prevalence rates were observed among younger age groups, which is also supported by similar population-based studies [14]. Males represented 54.0% of the study sample, while females constituted 46.0%. The present study showed no statistically significant association between gender and most chronic diseases. This result agrees with several studies which reported that gender differences in chronic disease prevalence become insignificant after adjusting for behavioral and socio-demographic factors [15,16].

Regarding body mass index, the mean BMI was 22.7 kg/m². Underweight participants represented a considerable proportion of the sample (33.6%). Interestingly, underweight and normal-weight individuals showed higher prevalence of several chronic diseases. This finding is lower than what is commonly reported in studies emphasizing obesity as a major risk factor [17], but similar results have been observed in populations where chronic illness, malnutrition, and disease-related weight loss are common [18]. More than half of the participants resided in urban areas (56.4%). Urban residents exhibited higher prevalence of cardiovascular, cerebrovascular, and gastrointestinal diseases. This finding is in agreement with other studies that reported higher chronic disease burden in urban settings due to sedentary lifestyle, unhealthy dietary habits, psychological stress, and environmental pollution [19,20].

Married participants represented the majority of the sample (55.2%) and showed higher prevalence of chronic diseases compared to other social groups. This result is consistent with studies suggesting that marital responsibilities, increased stress, and age-related factors may contribute to higher disease prevalence among married individuals [21]. Participants with two or more children demonstrated higher rates of chronic diseases, which may reflect cumulative stress, reduced self-care, and limited time for healthy behaviors, as reported in previous studies [22].

With regard to occupation, housewives and unemployed participants constituted the largest proportions of the study sample. The association between occupation and chronic disease prevalence was statistically significant. Similar findings were reported in studies indicating that unemployment and retirement are associated with increased risk of chronic diseases due to physical inactivity, psychological stress, and limited access to health care services [23].

Educational level showed a significant association with chronic diseases, where participants with lower educational attainment exhibited higher prevalence. This finding agrees with studies reporting that low education is associated with poor health literacy, unhealthy lifestyle practices, and delayed health-seeking behavior [24,25].

Lifestyle-related risk factors

The present study revealed a high prevalence of physical inactivity, as nearly half of the participants (49.2%) reported no regular physical activity. This finding is consistent with WHO reports and other studies that identified physical inactivity as one of the leading risk factors for non-communicable diseases worldwide [12,26].

Sleep pattern analysis showed that most participants slept in the evening (89.2%), with a mean sleep duration of 5.17 ± 2.05 hours. More than one-third of participants slept less than four hours per day. This finding agrees with studies that linked short sleep duration to increased risk of hypertension, diabetes mellitus, cardiovascular disease, and psychological stress [27,28]. Smoking prevalence was remarkably high in the present study (70.4%). Cigarette smoking was the most common type, followed by vaping and shisha. Moderate smoking intensity was predominant. Similar high smoking rates and patterns have been reported in regional studies, which demonstrated strong associations between smoking and respiratory, cardiovascular, and cerebrovascular diseases [29,30].

Alcohol consumption and substance addiction were reported by a small proportion of participants. Although the prevalence was low, previous studies have shown that even limited exposure to alcohol and drugs may worsen disease outcomes and increase the risk of complications among patients with chronic diseases [31]. The majority of participants consumed coffee and tea (76.4%), with a high level of consumption reported by most of them. Excessive

caffeine intake has been associated with sleep disturbance, anxiety, and increased cardiovascular risk in some studies [32].

Regarding mobile phone use, a considerable proportion of participants used their phones for more than three hours daily. Prolonged screen time has been associated with sedentary behavior, sleep disturbance, and increased psychological stress [33]. Psychological stress was commonly reported, with 50.8% experiencing stress sometimes and 22.0% always. This finding is consistent with studies identifying chronic stress as a major contributor to hypertension, cardiovascular disease, poor glycemic control, and unfavorable prognosis [34].

Prevalence and Pattern of Chronic Diseases

The present study demonstrated a high prevalence of chronic diseases among the study sample. Joint diseases were the most frequently reported condition (80.0%), followed by cerebrovascular diseases (74.0%), cardiovascular diseases (70.4%), gastrointestinal diseases (66.4%), diabetes mellitus (57.2%), and hypertension (56.4%). Similar disease patterns were reported in other community-based studies where musculoskeletal and cardiovascular diseases were among the most prevalent chronic conditions [35,36].

A high proportion of participants reported a family history of chronic disease (80.0%), which is consistent with studies emphasizing the combined role of genetic susceptibility and shared environmental factors in chronic disease development [37]. Only 7.2% reported a past medical history, which may indicate underdiagnoses or late detection of chronic conditions.

Most participants reported disease onset within the last five years, suggesting a recent increase in chronic disease burden. This finding agrees with studies reporting a rising incidence of chronic diseases due to lifestyle transitions and urbanization [38]. Associated chronic diseases were present in one-third of participants, with hypertension combined with diabetes mellitus and coronary heart disease being the most common combinations. This clustering has been widely reported and reflects shared risk factors such as physical inactivity, smoking, stress, and unhealthy diet [39].

Despite the high prevalence of complications (96.4%), only a small proportion of participants reported using dietary supplements. Similar findings were reported in studies suggesting low awareness and inadequate

The present study demonstrated a statistically significant association between age and the prevalence of several chronic diseases, with the highest proportions observed among participants aged 38–47 and 48–57 years. This finding is consistent with previous studies which reported that middle-aged adults carry a higher burden of chronic diseases due to cumulative exposure to behavioral risk factors and progressive physiological decline [12,13]. Younger age groups showed lower prevalence rates, which is in agreement with findings reported in developing countries [14].

Regarding gender, males showed slightly higher percentages of most chronic diseases compared to females; however, the association was not statistically significant. This result agrees with several studies indicating that gender alone is not a strong determinant of chronic disease prevalence when lifestyle and socioeconomic factors are considered [15,16].

Body mass index was significantly associated with several chronic diseases. Interestingly, underweight and normal-weight participants demonstrated higher proportions of chronic diseases compared to overweight and obese individuals. Similar findings have been reported in studies suggesting that chronic disease-related weight loss, malnutrition, and long-standing illness may explain higher disease prevalence among underweight individuals in certain populations [17,18].

Residence was another important factor, as urban residents exhibited higher prevalence of cardiovascular, cerebrovascular, and gastrointestinal diseases compared to rural residents. This finding is consistent with studies reporting that urbanization is associated with sedentary behavior, unhealthy diet, psychological stress, and environmental pollution, all of which contribute to chronic disease development [19,20].

Marital status showed varying associations with chronic diseases. Married participants demonstrated the highest prevalence of most chronic conditions. This result agrees with studies suggesting that increased responsibilities, psychosocial stress, and age-related factors among married individuals may contribute to higher disease prevalence [21]. A statistically significant association was observed between the number of children and chronic diseases, particularly among participants with two children, who showed the highest prevalence. This finding is consistent with studies reporting that increasing family responsibilities may negatively affect self-care practices and increase stress levels [22].

Occupation was significantly associated with chronic disease prevalence. Housewives, unemployed, and retired participants showed higher proportions of chronic diseases compared to employed individuals. Similar findings were reported in studies indicating that unemployment and retirement are associated with reduced physical activity, increased stress, and poorer access to health care services [23].

Educational level showed a significant association with most chronic diseases. Participants with lower educational attainment had higher prevalence rates, which agrees with studies demonstrating that low education is associated with limited health literacy, unhealthy lifestyle behaviors, and delayed utilization of health services [24,25].

Lifestyle factors and chronic disease associations

Physical inactivity was significantly prevalent, with nearly half of participants reporting no regular exercise. This finding is consistent with WHO reports identifying physical inactivity as a major contributor to non-communicable diseases worldwide [12,26].

Sleep duration and sleep timing were also important factors. Short sleep duration (<4 hours) was common and has been associated with increased risk of hypertension, diabetes, cardiovascular disease, and psychological stress, as reported in previous studies [27,28].

Smoking showed a strong association with several chronic diseases. Cigarette smoking was the most common form, followed by vaping and shisha, with moderate smoking intensity being predominant. These findings are consistent with regional and international studies linking smoking to respiratory, cardiovascular, and cerebrovascular diseases [29,30]. Alcohol consumption and substance addiction were reported by a small proportion of participants; however, previous studies indicate that even low levels of alcohol and drug use may worsen disease prognosis and increase complications among patients with chronic diseases [31]. High consumption of coffee and tea was common among participants. Excessive caffeine intake has been associated with sleep disturbance, anxiety, and cardiovascular effects in some populations [32]. Prolonged mobile phone use was also prevalent and has been linked to sedentary behavior, sleep disturbance, and increased psychological stress [33]. Psychological stress was frequently reported and showed a strong association with chronic diseases, which is consistent with studies identifying stress as a key

5. Conclusions

This cross-sectional study of 250 adults attending Al-Ramadi hospital demonstrated a high burden of chronic disease within the study sample. Joint disease was the most frequently reported condition (80.0%), followed by cerebrovascular disease (74.0%), cardiovascular disease (70.4%), gastrointestinal disease (66.4%), cancer (64.8%), respiratory disease (60.4%), diabetes mellitus (57.2%), hypertension (56.4%), and renal disease (54.0%). A family history of chronic disease was reported by 80.0% of participants, while associated chronic diseases were present in 33.6%. The high proportion of reported complications further indicates the substantial clinical burden carried by this hospital-based sample.

Chronic disease prevalence varied across several sociodemographic characteristics, including age, body mass index, residence, marital and family characteristics, occupation, and educational level, whereas gender showed less consistent differences. At the same time, modifiable lifestyle risks were common: 49.2% of participants reported no regular physical activity, 70.4% were smokers, 35.6% reported sleeping less than four hours, and psychological stress was

frequently reported. These findings show that the observed chronic disease burden occurred alongside a combination of social, demographic, familial, and behavioral factors rather than a single isolated determinant.

The findings support strengthening prevention and early-detection strategies that address smoking, physical inactivity, inadequate sleep, and psychological stress while also considering education, occupation, residence, and family history when planning health services. Targeted screening and health education may be particularly useful for groups with a higher observed disease burden. Because the study used a cross-sectional design and convenience sampling in a hospital setting, the results should be interpreted as associations within the study sample and should not be used to infer causality or precise population prevalence for all adults in Iraq.

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