

Exploring the Impact of Socioeconomic Differences (Knowledge & Awareness, Income, Occupation & Physical Activity) on Risk Factors & Management of CVDs: A Qualitative Study from CVD Patients

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Abstract

Background: Cardiovascular disease (CVD) has been indicated as the major cause of death worldwide. Socioeconomic differences, which include differences in income education, occupation & physical activity can affect healthcare practices, and health outcomes. The main aim of the study explained in this article is to find & explore the impact of socioeconomic differences on the risk factors and management of disease related to cardio from the perspectives of CVD patients.

Methods: A cross-sectional Qualitative study involving both male & female patients was carried out at DHQ Hospital Haripur, KPK, Pakistan from September 2024 to December 2024. Semi structured interviews were used to collect the data with the help of interview guide made and validated by the expert's opinion and piloting the study. The thematic analysis procedure was conducted using NVivo 14 software.

Results: Study findings showed the significant gaps in health-related knowledge (77%) and self-management deficit (77%) hindered effective disease control. Financial challenges, barriers to healthcare access (80%), further limited participant's ability to manage their health effectively. Additionally, barriers to physical activity (64.7%), limited guidance (58.82%), and occupational stress (70%) added layers of complexity to disease management. Moreover, positive outcomes were also observed in individuals who adhered to dietary plans (66%). Engaged in physical activity (41.7%) and maintained consistent treatment routines (43%).

Conclusion: Participants faced significant challenges in managing CVD due to gaps in health knowledge, self-management deficits, financial constraint, and barriers to healthcare access physical activity and occupational stress. There is a need to address these socioeconomic factors holistically to enable effective risk factor management and improve health outcomes for CVD patients.

KEYWORDS:

CVD, Qualitative research, Socioeconomics, management

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1. Introduction

Introduction: Cardiovascular disease (CVD) is the main reason behind the death globally. The frequency of deaths related to CVD has increased to 18.6 million in 2019 from 12.1 million in 1990 and as per the estimate it might reach 24 million by 2030 [1]. In the low & middle-income countries the ratio of death took place over three-quarters [2]. The countries in south Asian region like Pakistan, India, Sri Lanka, Bangladesh and Nepal are about quarter of the world's whole population. Comparing globally, it's been the highest portion of cardiovascular disease [3]. The burden of CVDs is significant in Pakistan where access healthcare and preventive measures is often limited. In accordance with the study of global burden of disease 2019, incident of standard age in Pakistan was 918/100,000 (684/100,000), and the standard rate of death was 357/100,000 (globally 239/100,000) [4]. In most of the low & middle countries the rise in CHD burden of the risk factors related to socio economic changes, increase in duration of life & way of living [5]. Socioeconomic differences like occupation, education, physical activity, access to services of healthcare and income all are linked with the incidence of CVD [6].

Methods & Materials

Study, Design, Setting & Participants

A cross-sectional qualitative study conducted from September 2024 to December 2024 among CVD patients. The research was conducted at District Headquarter Hospital Haripur, KPK, Pakistan. The study's population consisted of CVD patients both male & female, aged 18 and above, who lived in the designated geographical region.

Sampling Procedure & Sample Size Determination

The data saturation principle was used to determine the sample size. The data collection process continued until no new themes, patterns or insights emerged, and responses began to exhibit repetition. The data saturation point was reached after 64 interviews, but for reliability 6 further interviews were carried out bringing the total number of interviews to 70.

The study was conducted at DHQ Hospital Haripur, where participants were selected using a non-convenient random sampling technique. Participants were randomly selected to guarantee an unbiased selection process and to ensure the sample accurately represented the patient population. Efforts were made to include/take individuals from different age groups, socioeconomic backgrounds and genders aiming to gather varied viewpoints.

Inclusion & Exclusion Criteria

Both male & female of age 18 years and above with confirmed CVD and who consented to participate and were willing to be audio recorded were picked up in the study. Patients with communication difficulties, diagnosed with severe physical or mental health conditions or who chose not to participate were excluded from the study.

Data Collection Method

Every in-depth interview lasted 30 – 45 minutes and audio were recorded after the informed consent of participants. The interviews were recorded verbatim, transcribed and the key points were noted throughout. During the interviews, both Urdu and Hindko, the prevalent languages in the area were used. The interview began with the questions about the interviewee's demographic information such as age, gender, occupation, educational background, family history of CVD and disease duration. Additionally, to ensure comprehensive data collection, more in-depth and specific questions were asked.

Thematic Analysis

MS word was used to help arrange and organize the documents and audio recordings related to interviews. Transcripts were produced to ensure that all spoken content was precise. The

thematic analysis procedure was conducted using Nvivo 14, a software developed particularly for the analysis of qualitative data [7]. Using Nvivo 14, we were able to recognize new codes and identify themes and sub-themes from the transcripts.

Results

Sociodemographic Characteristics of Participants

The total number of participants in the research was 70. 67.1% were male and 32.85% were female. The range of age of the participants varied from 20-77 years. Among them, 85.71 % had no formal education. 82.85% owned their houses while 17.14% were living in a rented house. Regarding family monthly income, 25.71% had less the 25K, 52.85% had monthly income of 26K -50K, and 21.42% had more the 51K. Moreover, 54.28% had a family medical history of CVD's.

Table 1: Sociodemographic Characteristics of Participants

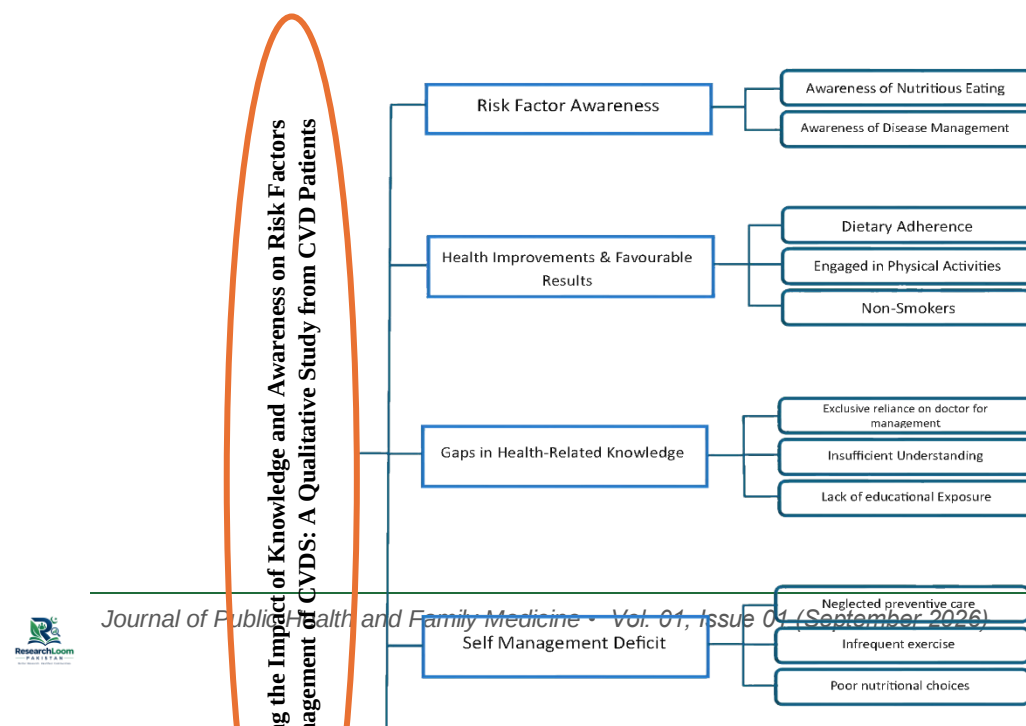
The sociodemographic details of the study participants are shown in this table, which also shows the distribution of factors including education, age, marital status, gender, monthly family income, housing status, smoking status and family history CVDs.

Variables	Category	Frequency (n)	Percentage (%)
Gender	Male	47	67.1
	Female	23	32.85
Age	20 – 39 years	13	18.57
	40 – 59 years	44	62.85
	60 – 79 years	13	18.57
Qualification	No formal Education	60	85.71
	Matriculation	12	17.14
	Completed College	3	4.28
Marital Status	Married	64	91.42

	Unmarried/Single	3	4.28
	Widow	3	4.28
Family Monthly Income	< 25,000	18	25.71
	26,000 – 50,000	37	52.85
	51,000	15	21.42
Hypertensive	Yes	45	64.28
	No	25	35.71
Smoking Habit	Yes	12	17.14
	No	58	82.85
Housing Status	Own	58	82.85
	Rent	12	17.14
Family History of CVD	Yes	38	54.28
	No	32	45.71

Table 1: Sociodemographic Characteristics of Participants

The findings of the study highlight the multifaceted impact of socioeconomic differences including knowledge and awareness, income, occupation and physical activity on the risk factors and management of CVDs. Four main factors were examined in detail, revealing interconnected patterns that significantly influence patients' ability to prevent and manage CVD effectively. After data analysis, the main themes and sub-themes emerged can be seen in Figure 1.



Theme 1: Impact of Knowledge and Awareness

Risk Factors Awareness

Sixty-nine participants (n=48) were aware of the key factors contributing to cardiovascular health. Awareness regarding nutritious eating was particularly high, with participants acknowledging the importance of maintain a balanced diet, reducing salt intake, avoiding unhealthy fats, and including fruits and vegetables in their meals.

“Cholesterol can have a very negative impact on health. It’s advisable to use oil and fatty food minimally to manage cholesterol levels and reduce the risk of CVDs.” (P5)

“Vegetables and fruits should be consumed because they contain a good amount of minerals and vitamins. Additionally, lentils should be included in diet.” (P2)

Participants showed substantial awareness about disease management strategies, including medication adherence, regular health checkups. And timely consultations with healthcare provider.

“Regularly checking blood pressure is very important. High blood pressure can lead to problems. Therefore, its best not to miss blood pressure medication and to have it checked regularly.” (P17)

Health Improvements and Favourable Results

Participants reported improvements in health outcomes because of their adherence to dietary recommendation, although consistency in following these guidelines caried. (45%, n=31) participants actively engaged in physical activity, this engagement was often inconsistent due to various barriers.

“After my diagnosis, I significantly reduced my intake of red meat, fried food, sugary beverages, and processed snacks, focusing instead on a good diet like fruits, lean proteins, vegetables, and grains.” (P9)

“I walk for 1 hour every morning and one hour every evening. Additionally, I do exercises recommended by the doctor.” (P6)

Eight-two percent participants claimed that they have never smoked, they also reflected an understanding of the detrimental effect of smoking in CVD and health.

“For CVD, smoking is a major factor of risk, we can significantly reduce the risk and improve heart health by quitting smoking.” (P5)

Gaps in Health-Related Knowledge

Gaps in health-related knowledge emerged as a significant challenge. Eighty-three percent participants displayed and over-reliance on doctors for disease management, seeking professional intervention only when symptoms became severe.

“Whatever the doctor tells me, I listen to it. I don’t get any information from anywhere else.” (P16)

“I don’t have much information about this, only what the doctor told me after the CVD was diagnosed. Other than that, I don’t know anything, because I never tried to gather information on my own.” (P3)

Eighty-Eight percent participants demonstrated insufficient understanding of disease mechanisms, medication side-effects, and the importance of preventive care.

“I don’t understand the things well. Even I don’t fully understand what the doctor tells me.” (P1)

Self-Management Deficit

Seventy-seven percent of participants struggled to integrate the knowledge into their daily routines. Neglecting preventive care was common among participants, with irregular health checkups and poor monitoring of vital health indicators.

Theme 2: Impact of Income

2.1 Compromised Living

Sixty-six percent (n=47) participants faced struggles in managing their cardiovascular health. They reported compromised living conditions, with limited financial resources forcing them to prioritize essential expenses over health-related needs.

“Due to a lack of money, sometimes I am forced to compromise on my health. When I don’t have money, I stop taking my medicines. If I buy medicines, then I must compromise on diet.” (P28)

Compromised diets were also a common consequence, where affordability dictated food choices, often favouring inexpensive but unhealth options.

“My income significantly impacts my food choices, leading me to prioritize cheaper, low-nutrient options over healthier alternatives.” (P33)

2.2 Financial Instability in Health Management

Conversely, 75% (n=53) of participants reported a reliance on external financial sources, such as loans, community aid, or family support, to cover medical bills and treatment costs. Self-paying for healthcare expenses placed additional strain on household finances. Moreover, due to the lack of money participants left vulnerable to medical emergencies, resulting in inconsistent treatment adherence and follow-up care.

“Sometimes it happens that we don’t have money and need to visit the doctor and to get medicines, so at that time, we must borrow money from someone.” (P20)

“It is difficult to get treatment due to lack of money because the medicines are very expensive. For the reason, I cannot take medicine for the whole month; I only take it for 2 weeks and then go without it for two weeks.” (P31)

2.3 Barriers to Healthcare

Seventy-five percent (n=53) of participants often reported being unable to buy medicines regularly or as prescribed by healthcare providers. Delays in seeking treatment due to financial limitations were also common. As participants said that they struggled to afford diagnostic tests, consultations with specialists, or advanced treatments.

"Sometimes it happens, I don't go to the doctor for a check-up when I donot have money."
(P24)

"Yes, many times, it has happened that due to a lack of money, I must stop my treatment. Sometimes, four or five months ago by without visiting the doctor." (P21)

Theme 3: Impact of Physical Activity

3.1 Barriers to Physical Activity

Fifty-two percent (n=37) of the participants reported that they had trouble doing physical activity due to physical, environmental, and psychological barriers. Physical health limitations, including fatigue, joint paint, and other medical conditions, restricted physical activity. Limited resources, such as lack of access to gyms, walking tracks, or safe outdoor spaces were also common barriers reported by the participants.

"Feeling tired and week stops me from doing regular physical activity." (P45)

Another participant mentioned that *"Fatigue and joint pain are the barriers that stop me from doing exercise."* (P49)

3.2 Activity Confined to Responsibility

Many participants 76% (n=54) primarily engaged in physical activities that revolved around their daily duties and responsibilities. These activities included tasks like cleaning the house. Cooking and completing work-related tasks, like household's chores or occupational tasks, rather than being part of a structured fitness routine. They said that they did not integrate structured fitness routines, such as scheduled workout or exercise sessions into their regular schedule.

3.3 Outcomes of Physical Activity

Among the participants who maintained regular physical activity, forty-one (n=30) reported the health benefits they experienced. These included improved heart health, better symptoms management and enhanced psychological well-being, underscoring the holistic benefits of physical fitness.

"Regular physical activity makes my body feel less stiff and improves my breathing." (P49)

"Exercise keeps me calm and gives me time to think positively." (P51)

Theme 4: Impact of Occupation

4.1 Occupational Demands and Workplace Challenges

Sixty percent (n=43) of participants reported that their jobs required high physical examination which often led to physical fatigue, body aches and exhaustion. They also reported that they experience workplace challenges and pressure, including tight deadlines, high expectations from supervisors, and the constant pressure to perform.

“It’s physical demanding for sure. Lifting heavy engine parts, bending over car frames and working in cramped spaces led to body aches and fatigues.” (P60)

Half of the participants also reported extended working hours, highlighting a lack of time for self-care, exercise and adequate rest.

“The long hours are the biggest challenges. I often work late at night and early morning to keep the shop running. This irregular schedule really messes with my sleep and it’s hard on my body.” (P54)

4.2 Workplace Stress and Environment

Seventy percent (n=50) reported experiencing high levels of stress due to job insecurity, excessive workloads, lack of recognition, and poor workplace relationships. Participants highlighted that the emotional toll of workplace stress often overshadowed their ability to focus on self-care, disease management, and adherence to treatment plans.

“The main causes of stress are the physical demands of the job, the low pay and job insecurity.” (P55)

Participants emphasized the impact of stress on their health, noting symptoms such as chest pain, irregular heart beats, and increased dependence on medication to manage stress-induced symptoms.

“I believe that chronic stress has negatively impacted my heart health. It led to high blood pressure, increased heart rate, and other heart problems.” (P61)

“I have been experiencing chest pain, shortness of breath especially during stressful times.” (P64)

4.3 Work-Life Balance and Lifestyle Habits

Forty percent of the participants reported difficulty in maintaining work-life balance, often sacrificing personal time for extended work hours or job-related commitments. The inability to prioritize rest, relaxation and quality family time added emotional stress and reduced the capacity for self-care.

"There is pressure to meet productivity targets. I frequently work beyond regular work hours, and I Struggle to give time to my family which add stress." (P52)

Participants reported poor eating patterns at the workplace, including skipping meals, overeating unhealthy snacks, or consuming irregular meals due to workload pressure. Fast food, packaged snacks, and caffeinated beverages were frequently consumed to save time, despite their known negative impacts on cardiovascular health.

"The demands of my job often lead to poor eating choices, as I prioritize work over meal preparation and healthy eating. It's easy to grab something quick or processed snacks." (P66)

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