UNDERSTANDING PATIENT AWARENESS AND MODIFIABLE RISK FACTORS OF ISCHEMIC HEART DISEASE: A CROSS-SECTIONAL STUDY

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Abstract
Ischemic heart disease (IHD), also known as coronary artery disease, is a leading cause of mortality worldwide and an escalating public health challenge in low- and middle-income countries, including Pakistan. Urbanization, sedentary lifestyles, unhealthy diets, and low awareness have driven rising IHD incidence. This study aimed to evaluate knowledge of IHD risk factors, prevalence of modifiable risk factors, and preventive behaviors among patients in Chakwal District, Pakistan, with attention to sociodemographic and lifestyle influences. A descriptive cross-sectional study was conducted among 140 patients at District Headquarters Hospital, Chakwal, using a structured questionnaire assessing sociodemographic characteristics, medical/family history, lifestyle habits, and IHD awareness. Data were analyzed using SPSS version 26 for frequencies, means, and associations. Ethical approval was obtained, and informed consent ensured. The sample comprised 57% females and 43% males, with 57.1% rural residents. Key risk factors included family history of heart disease (89%), diabetes (77.1%), smoking (62.9%), and sedentary lifestyle (68.6%). Only 31.4% followed healthy diets. Awareness was moderate for some risks (advancing age 74%, obesity 54.3%, stress 51.4%) but limited for preventive measures (quitting smoking 43%, regular exercise 37.1%, mental well-being 45.7%). Most (80%) valued medical guidance for prevention. High prevalence of modifiable risk factors and gaps in preventive knowledge highlight the need for targeted education, particularly in rural areas. Strengthened public health initiatives focusing on awareness, screening, and lifestyle interventions are essential to reduce IHD burden in Pakistan.

Keywords: Ischemic heart disease, coronary artery disease, risk factors, hypertension, diabetes, public health

ПОНИМАНИЕ ОСВЕДОМЛЕННОСТИ ПАЦИЕНТОВ И МОДИФИЦИРУЕМЫХ ФАКТОРОВ РИСКА ИШЕМИЧЕСКОЙ БОЛЕЗНИ СЕРДЦА: ПОПЕРЕЧНОЕ ИССЛЕДОВАНИЕ

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Аннотация
Ишемическая болезнь сердца (ИБС), также известная как коронарная болезнь, является одной из ведущих причин смертности во всем мире и все более серьезной проблемой общественного здравоохранения в странах с низким и средним уровнем дохода, включая Пакистан. Урбанизация, малоподвижный образ жизни, нездоровое питание и низкая осведомленность привели к росту заболеваемости ИБС. Целью данного исследования было оценить уровень знаний о факторах риска ишемической

болезни сердца (ИБС), распространенность модифицируемых факторов риска и профилактическое поведение среди пациентов в округе Чаквал, Пакистан, с учетом социально-демографических факторов и образа жизни. Было проведено описательное поперечное исследование среди 140 пациентов в окружной больнице Чаквала с использованием структурированной анкеты, оценивающей социально-демографические характеристики, медицинский/семейный анамнез, образ жизни и осведомленность об ИБС. Данные были проанализированы с помощью SPSS версии 26 для определения частот, средних значений и взаимосвязей. Было получено этическое одобрение и обеспечено информированное согласие. Выборка состояла из 57% женщин и 43% мужчин, 57,1% из которых проживали в сельской местности. Ключевые факторы риска включали семейный анамнез сердечных заболеваний (89%), диабет (77,1%), курение (62,9%) и малоподвижный образ жизни (68,6%). Только 31,4% придерживались здорового питания. Осведомленность о некоторых факторах риска была умеренной (пожилой возраст 74%, ожирение 54,3%, стресс 51,4%), но ограниченной в отношении профилактических мер (отказ от курения 43%, регулярные физические упражнения 37,1%, психическое благополучие 45,7%). Большинство (80%) высоко оценили медицинские рекомендации по профилактике. Высокая распространенность модифицируемых факторов риска и пробелы в знаниях о профилактике подчеркивают необходимость целенаправленного обучения, особенно в сельских районах. Усиление инициатив в области общественного здравоохранения, направленных на повышение осведомленности, скрининг и изменение образа жизни, имеет важное значение для снижения бремени ишемической болезни сердца в Пакистане.

Ключевые слова: ишемическая болезнь сердца, коронарная болезнь, факторы риска, гипертония, диабет, общественное здравоохранение

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Introduction

Ischemic heart disease (IHD), characterized by reduced blood flow to the myocardium due to coronary artery atherosclerosis, is the leading cause of cardiovascular mortality globally, accounting for approximately 17.9 million deaths annually [1]. In low- and middle-income countries, including Pakistan, IHD contributes substantially to morbidity and mortality, driven by urbanization, economic disparities, and shifts toward sedentary lifestyles and processed food consumption [2].

In Pakistan, cardiovascular diseases, particularly IHD, have emerged as a dominant cause of death, with higher incidence at younger ages compared to Western populations [3]. Modifiable risk factors—hypertension, diabetes, dyslipidemia, smoking, obesity, physical inactivity, and stress—play central roles, often compounded by non-modifiable factors such as age, sex, and family history [4, 5,6]. Despite the preventable nature of most IHD cases through lifestyle modification and early intervention, low public awareness and limited healthcare access perpetuate the rising burden, especially in rural and underserved regions.

This study assessed patient awareness of IHD risk factors, prevalence of modifiable risks, and attitudes toward preventive behaviors in Chakwal District, Punjab, to inform targeted public health strategies.

Methods

Study Design and Setting

A descriptive cross-sectional study was conducted at District Headquarters Hospital (DHQ), Chakwal, Punjab, Pakistan.

Participants and Sampling

Convenience sampling recruited 140 adult patients attending outpatient or inpatient services. Inclusion criteria were age ⩾18 years and willingness to participate; exclusion criteria included severe illness precluding questionnaire completion.

Data Collection

A structured questionnaire was administered by the researcher. Sections covered:

- Sociodemographic characteristics (age, gender, residence, marital status, education, occupation, family size)

- Medical and family history (diabetes, hypertension, heart disease, smoking)

- Lifestyle factors (physical activity, dietary patterns)

- Knowledge and attitudes toward IHD risk factors and prevention

Questionnaires were self-completed with assistance available. Informed consent was obtained verbally and in writing.

Ethical Considerations

Ethical approval was granted by hospital administration. Participation was voluntary, confidentiality assured, and no identifying information recorded.

Data Analysis

Data were entered and analyzed using SPSS version 26. Descriptive statistics (frequencies, percentages, means ± SD) were computed. Associations were explored using chi-square tests ($p < 0.05$ significance).

Results

Sociodemographic Characteristics

Of 140 participants, 57% were female and 43% male. Age distribution: 20–30 years (17.1%), 30–40 years (28.6%), 40–50 years (25.7%), 50–60 years (14.3%), >60 years (14.3%). Residence: rural (57.1%), urban (42.9%). Marital status: married (31.4%), unmarried (31.4%), widowed/other (37.1%). Education: illiterate (37.1%), middle level (42.9%), literate/higher (20%). Occupation: housewife (28.6%), unemployed (25.7%), agriculture (17.1%), business/employed (14.3% each).

Risk Factors and Lifestyle

Family history of heart disease was reported by 89%, diabetes by 77.1%, and smoking by 62.9%. Sedentary lifestyle predominated (68.6%), with only 31.4% physically active. Dietary patterns: healthy (31.4%), mixed (57.1%), junk/fast food (11.4%).

Awareness and Attitudes

Most participants recognized advancing age (74%) as a risk factor, followed by obesity (54.3%) and stress (51.4%). Preventive beliefs were lower: quitting smoking (43%), regular exercise

(37.1%), mental well-being (45.7%). However, 80% endorsed medical guidance for prevention and management.

Discussion

This study reveals a high burden of modifiable IHD risk factors among patients in Chakwal District, coupled with moderate awareness of risks but substantial gaps in preventive knowledge. The 89% prevalence of family history suggests strong genetic and shared environmental influences, exceeding rates reported elsewhere (e.g., 51.3% in Jamali et al., 2024) [11]. Diabetes prevalence (77.1%) was markedly higher than in comparable studies (31.1% in Jamali et al.),[11] underscoring the escalating diabetes-IHD synergy in Pakistan, where diabetic patients face doubled atherosclerosis risk [4].

Smoking rates (62.9%) aligned closely with prior reports (66.4%),[11] highlighting persistent tobacco use despite known cardiovascular harm. Sedentary lifestyle (68.6%) and suboptimal dietary patterns reflect broader urbanization-driven shifts, with only 31.4% maintaining healthy eating—contrasting sharply with higher healthy diet adherence in some cohorts (47.9%) [11]. These findings reinforce the role of lifestyle in IHD escalation, particularly in rural settings where physical labor may be declining yet awareness lags.

Awareness of advancing age as a risk factor (74%) exceeded rates in other regional studies (47.1% in Pirasath et al., 2021), possibly reflecting greater exposure to health messaging among hospital attendees. However, recognition of obesity (54.3%) and stress (51.4%) was lower than in some populations (70.6% and 76%, respectively),[12] indicating targeted education needs. Critically, preventive knowledge was limited: only 43% acknowledged smoking cessation benefits (versus 77.4% in Yang et al., 2024),[12] 37.1% valued exercise (versus 89.3%),[12] and 45.7% recognized mental health's role (versus 94.5%) [13]. This gap likely contributes to poor behavioral change despite high trust in medical guidance (80%).

Socio demographically, higher female representation (57%) and rural residence (57.1%) align with access patterns at public facilities but highlight vulnerabilities in these groups. Lower education (37.1% illiterate) correlates with reduced awareness, consistent with national trends [9,10]. Comparisons with larger studies (e.g., Abbas et al., 2009, N=2000) [9] and recent work (Ahmad et al., 2025) [10] reveal persistent rural-urban disparities and low preventive uptake.

These results emphasize multilevel interventions: community-based education on modifiable risks, integration of lifestyle counseling in primary care, and rural outreach programs. Strengthening screening for diabetes, hypertension, and dyslipidemia—given their high co-prevalence—could enable early intervention. Public campaigns should address misconceptions about prevention while leveraging high trust in physicians.

Limitations

Convenience sampling and hospital-based recruitment limit generalizability to the broader community. Self-reported data may introduce recall or social desirability bias. The questionnaire lacked validated scales, and cross-sectional design precludes causality. Future studies should employ probability sampling, larger cohorts, and longitudinal follow-up.

Conclusion

Ischemic heart disease poses a preventable yet growing threat in Pakistan, exacerbated by high modifiable risk factor prevalence and inadequate preventive awareness. This study in Chakwal District highlights urgent needs for enhanced health education, routine screening, lifestyle promotion, and equitable rural healthcare access. Coordinated public health efforts can substantially reduce IHD morbidity and mortality.

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