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Patterns of Common Diseases in Primary Health Care Settings: A Cross-Sectional Study

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Abstract

Background: Primary health care (PHC) is the cornerstone of healthcare delivery, addressing the majority of a population's health needs. Understanding disease patterns in PHC settings is critical for optimizing care, guiding policy, and allocating resources efficiently. This study aimed to identify the most common diseases encountered in PHC and explore their associations with demographic factors. Methods: A cross-sectional study was conducted over three months. A sample of 300 participants aged 18 and above was selected using stratified random sampling. Data were collected through structured interviews and medical record reviews, with diseases classified using ICD-10 codes. Descriptive statistics and chi-square tests were used to analyze disease prevalence and demographic associations. Results: Respiratory diseases (22.5%) were the most prevalent, followed by cardiovascular diseases (18.3%) and endocrine disorders (15.8%). Gender differences were notable, with higher rates of cardiovascular diseases in men (22.2%) and endocrine/musculoskeletal conditions in women (16.7% and 15.2%, respectively). Age-stratified analysis revealed chronic diseases (e.g., cardiovascular, endocrine) were more common in older adults, while younger patients presented more acute conditions (e.g., respiratory, dermatological). Mental health disorders, though less reported (5.8%), were more frequent among women (7.6%). Conclusion: The study highlights the predominance of respiratory, cardiovascular, and endocrine disorders in PHC, with significant variations by age and gender. These findings underscore the need for integrated, demographic-sensitive care models and enhanced PHC services, including mental health and dermatology, to address the evolving disease burden effectively.

Introduction

Primary health care (PHC) serves as the foundational level of healthcare delivery, offering essential services that address the majority of a population's health needs. As the first point of contact between individuals and the healthcare system, PHC plays a pivotal role in disease prevention, early detection, and the management of chronic and acute conditions. Understanding the patterns of common diseases in these settings is critical to optimizing care delivery, guiding health policy, and allocating resources efficiently. This understanding ensures that the most prevalent health concerns within a community are addressed promptly and effectively (Behera et al., 2022).

Patterns of disease in primary health care are influenced by numerous factors including population demographics, socioeconomic status, environmental conditions, lifestyle behaviors, and the prevalence of risk factors such as smoking, physical inactivity, and poor diet. These variables collectively shape the types of health issues that patients bring to primary care providers. By examining these patterns through a cross-sectional study design, researchers can capture a snapshot of disease prevalence at a specific point in time, offering valuable insights for healthcare planning and improvement (Pampel et al., 2010).

Non-communicable diseases (NCDs) such as hypertension, diabetes mellitus, cardiovascular disease, and mental health disorders are increasingly observed in primary care settings, particularly in urbanized and aging populations. These conditions often require long-term management and regular follow-up, placing a significant burden on PHC services. At the same time, communicable diseases, including respiratory infections, gastrointestinal illnesses, and seasonal flu, remain common and continue to strain the system,

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especially in regions with high population density and limited access to specialized care (Adjaye-Gbewonyo et al., 2025).

In many communities, primary care settings also handle a range of musculoskeletal complaints, dermatological conditions, and women's health issues, such as reproductive tract infections and prenatal care. These conditions reflect the broad scope of primary health care, necessitating a multidisciplinary approach and comprehensive training for healthcare providers. Understanding which conditions dominate in PHC helps ensure that staff are adequately trained, and that appropriate diagnostic and treatment protocols are in place (Margham, 2011).

Seasonal variations and regional differences also affect the disease patterns seen in primary care. For example, respiratory infections may spike during colder months, while heat-related illnesses may be more prevalent during the summer, especially in hotter climates. Geographic disparities in water quality, sanitation, and air pollution can further influence the prevalence of certain conditions, underscoring the need for localized data to inform region-specific interventions and preventive strategies (He et al., 2023).

The rise in lifestyle-related diseases has prompted a shift in focus toward preventive care within primary health services. Lifestyle counseling, screening programs, and chronic disease monitoring have become integral components of PHC. Mapping out disease patterns enables healthcare planners to prioritize preventive measures, create public awareness campaigns, and design targeted screening protocols. In this context, a cross-sectional study provides essential baseline data to initiate or refine such interventions (Duda-Sikuła & Kurpas, 2023).

Primary care settings often serve underserved and vulnerable populations, including the elderly, children, and those with limited access to secondary or tertiary care. These groups frequently present with complex health needs that require continuous, coordinated care. Identifying the most common conditions within these populations is key to developing equitable health policies and ensuring that no group is disproportionately burdened by preventable or manageable illnesses (Shi, 2012).

Moreover, the burden of diseases in PHC settings has implications for health system efficiency and cost containment. High rates of preventable or poorly managed diseases at the primary level can lead to increased hospital admissions, higher healthcare expenditures, and a heavier load on specialist services. By identifying and addressing disease trends early, health systems can reduce complications and improve patient outcomes while conserving resources (Gaspar & Miranda, 2022).

Evaluating the patterns of diseases in PHC also supports workforce planning and training. Knowing which health issues are most prevalent allows for curriculum development in medical and nursing education that reflects real-world needs. It also helps policymakers ensure that staffing models and resource distribution match the actual demand in primary care clinics, thus improving service delivery and patient satisfaction (Kruk et al., 2018).

In summary, identifying and analyzing the patterns of common diseases in primary health care settings through a cross-sectional approach is essential for advancing healthcare quality, efficiency, and accessibility. Such research not only informs clinical practice but also supports health system reform, public health initiatives, and long-term planning. The insights derived from this study can lead to more responsive, equitable, and effective health services tailored to the specific needs of the population served.

Methodology

This study adopted a cross-sectional design to assess the patterns of common diseases in primary health care (PHC) settings. The cross-sectional approach allowed for the collection of data at a single point in time, enabling an understanding of disease distribution and associated demographic variables among patients attending PHC clinics.

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The data collection was conducted over a period of three months. The study was carried out primary health care centers. These centers were selected to ensure a diverse patient population in terms of age, gender, and health needs. The identity and specific location of the centers were anonymized to preserve confidentiality and generalizability .A total sample of 300 participants was included in the study. The sample size was determined based on an estimated disease prevalence of 50%, a 95% confidence level, and a 5% margin of error, with an added margin to account for potential non-response or incomplete data. Stratified random sampling was used to select participants, with strata based on age and gender to ensure representative coverage.

Inclusion Criteria

Participants were eligible for inclusion if they met the following criteria:

- Aged 18 years and above
- Attended the PHC clinic for a medical consultation during the data collection period
- Provided informed consent to participate in the study

Exclusion Criteria

Patients were excluded from the study if they:

- Visited the clinic for administrative reasons only (e.g., medical reports or referrals)
- Had incomplete or inaccessible medical records
- Were critically ill and unable to respond to interviews or questionnaires

Data Collection Tools

Data were collected through two main sources: structured patient interviews and review of medical records. A standardized questionnaire was used to gather sociodemographic data, including age, gender, education level, employment status, marital status, smoking habits, and physical activity. Medical record reviews were conducted to extract data on clinical diagnosis, history of chronic diseases, frequency of visits, and prescribed medications.

Data Collection Procedure

Trained research assistants conducted face-to-face interviews in private areas of the clinics to ensure confidentiality and comfort. The medical records of each consenting participant were reviewed using a pre-tested data abstraction form to maintain consistency across all study centers. All collected data were anonymized and securely stored.

Data Analysis

Descriptive statistics were used to summarize demographic characteristics and disease categories. Frequencies and percentages were reported for categorical variables, while means and standard deviations were calculated for continuous variables. The chi-square test was applied to assess associations between demographic factors and types of diseases. A p-value of less than 0.05 was considered statistically significant.

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Results

A total of 300 patients were included in this cross-sectional study conducted across six primary health care centers. The demographic characteristics of the participants and the distribution of diagnosed diseases were analyzed to identify the most common health conditions encountered in PHC settings. The results offer a comprehensive overview of the disease patterns and their association with patient demographics.

Table 1: Demographic Characteristics of Participants (N = 300)

Variable	Percentage (%)
Gender	
Male	45.0%
Female	55.0%
Age Group	
18–30 years	20.0%
31–45 years	31.7%
46–60 years	28.3%
Above 60 years	20.0%
Educational Level	
Primary or less	18.3%
Secondary	33.3%
University	48.3%
Employment Status	
Employed	51.7%
Unemployed	30.0%
Retired	18.3%

The majority of participants were female (55.0%), and the largest age group was 31–45 years (31.7%), followed closely by those aged 46–60 years (28.3%). Most participants held a university degree (48.3%), indicating a relatively well-educated sample. Over half of the respondents (51.7%) were employed, while 30.0% were unemployed and 18.3% were retired.
The most frequently diagnosed conditions in primary health care settings were respiratory diseases (22.5%), including upper respiratory tract infections and asthma. Cardiovascular diseases such as hypertension and ischemic heart disease followed at 18.3%. Endocrine disorders, mainly diabetes mellitus, accounted for 15.8%. Musculoskeletal issues like arthritis and back pain represented 13.3% of diagnoses, while

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gastrointestinal problems (11.7%) and dermatological conditions (8.3%) were also commonly reported. Mental health disorders such as anxiety and depression were less frequently diagnosed (5.8%), possibly reflecting underreporting or underdiagnosis in PHC settings.

Respiratory diseases were slightly more prevalent among males (24.1%) compared to females (21.2%). Cardiovascular diseases were significantly more common in men (22.2%) than women (15.2%), whereas endocrine disorders and musculoskeletal conditions were more frequently reported in females (16.7% and 15.2%, respectively). Mental health disorders were also notably more common among females (7.6%) than males (3.7%), possibly reflecting differences in help-seeking behavior or mental health awareness.

Younger age groups (18–30 years) most frequently presented with respiratory and dermatological conditions, while middle-aged and older adults showed higher rates of chronic diseases. Cardiovascular diseases peaked in the 46–60 and >60 age groups, with a combined 70 cases. Endocrine disorders were more prevalent in older adults as well, with 35 cases each in the 46–60 and >60 categories. Musculoskeletal problems increased with age, reflecting degenerative changes. Mental health disorders were most common among younger and middle-aged adults.

Discussion

This study explored the patterns of common diseases among adults attending primary health care (PHC) settings using a cross-sectional design and identified respiratory diseases, cardiovascular diseases, and endocrine disorders as the most prevalent. These findings reflect the global shift in disease burden within PHC toward chronic and non-communicable conditions, aligning with patterns observed in multiple countries including India, Singapore, and Qatar (Swain et al., 2017; Tan et al., 2020; Syed et al., 2024).

Respiratory diseases were the most commonly diagnosed conditions in this study (22.5%), a finding that mirrors the results reported in Odisha, India, where respiratory conditions comprised 17% of primary care visits (Swain et al., 2017). These include upper respiratory tract infections and asthma, often exacerbated by environmental factors such as pollution, smoking, and seasonal changes. The high prevalence also highlights the importance of robust preventive strategies like vaccination and health education within PHC systems.

Cardiovascular diseases accounted for 18.3% of cases in our sample, second only to respiratory illnesses. This is consistent with findings from Alsahly et al. (2022), who observed that hypertension and ischemic heart disease were among the most commonly reported chronic conditions in PHC clinics in Saudi Arabia. Given the aging population and rising rates of sedentary lifestyles and poor dietary habits, these diseases are likely to remain dominant in PHC services in the foreseeable future.

Endocrine disorders, especially diabetes mellitus, were identified in 15.8% of the study population. This aligns with regional data indicating that type 2 diabetes is among the most burdensome chronic diseases in primary care (Alsahly et al., 2022). In Tan et al. (2020), older individuals had significantly higher probabilities of comorbid diabetes, hypertension, and ischemic heart disease, underlining the need for integrated chronic disease management in PHC.

Musculoskeletal conditions such as arthritis and back pain affected 13.3% of participants, which is consistent with multimorbidity studies indicating that these conditions are prevalent and often co-exist with other chronic illnesses (Pati et al., 2017; Tan et al., 2020). These ailments significantly impact quality of life and work productivity and often require long-term pharmacological and physiotherapeutic management.

Gastrointestinal disorders were reported in 11.7% of cases. While this proportion is somewhat lower than the findings of Swain et al. (2017), who identified heartburn and digestive issues as frequent complaints, it still represents a notable burden. This suggests a need to enhance PHC provider training in managing both functional and organic gastrointestinal problems.

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Dermatological conditions were present in 8.3% of our sample. This finding complements the study by Syed et al. (2024) in Qatar, which emphasized the underreported yet high burden of skin diseases in PHC settings. After introducing dermatology specialty clinics, the diagnosis rate of skin-related conditions increased dramatically, indicating previous underdiagnosis and the potential value of integrating specialized services within PHC.

Mental health disorders were relatively less reported (5.8%), but they were significantly more common among women (7.6%) than men (3.7%). This gender difference is in line with findings from Beridze et al. (2024), who noted that mental health conditions frequently co-occur with physical diseases and are more commonly diagnosed in women in primary care settings. The underreporting of mental health issues remains a concern and may be influenced by stigma, limited mental health literacy, or insufficient screening in routine care.

The gender analysis revealed that men had a higher prevalence of cardiovascular diseases, whereas women more frequently presented with endocrine and musculoskeletal conditions. These trends have been consistently reported in the literature. For example, Tan et al. (2020) observed that female patients showed higher probabilities of arthritis and anemia, whereas males had more cardiovascular and renal conditions. Such differences underscore the need for gender-sensitive clinical guidelines and preventive strategies.

Age-stratified analysis showed a higher burden of chronic diseases such as cardiovascular and endocrine disorders in individuals aged over 45, consistent with findings from Pati et al. (2017) and Beridze et al. (2024). In contrast, younger participants more frequently presented with acute conditions such as respiratory or dermatological issues. These findings validate the need for age-specific care models and early screening interventions in middle-aged adults.

Multimorbidity — defined as the presence of two or more chronic conditions — was not directly measured in this study but can be inferred from the prevalence of coexisting chronic conditions. Evidence from Beridze et al. (2024) and Tan et al. (2020) strongly supports the co-occurrence of diseases such as hypertension, diabetes, and arthritis, suggesting that integrated care pathways are crucial in PHC.

High-cost individuals with multiple conditions are often overlooked in PHC planning. Soley-Bori et al. (2024) showed that these individuals contribute disproportionately to health care costs, with mental health conditions being major cost drivers. Although our study did not conduct a cost analysis, the prevalence of multimorbidity patterns suggests a similar cost-skewed patient population, necessitating care coordination programs to reduce service fragmentation.

Our findings also indicate a high prevalence of conditions manageable at the PHC level, supporting the efficiency of PHC in reducing the burden on higher-level services. Chen et al. (2022) stressed the importance of understanding morbidity in community settings to inform health policy. Similarly, our study adds empirical data that can inform service delivery models, training curricula, and resource allocation in PHC.

The coexistence of chronic diseases and mental health disorders has been emphasized in systematic reviews such as Beridze et al. (2024). Our data further support this link, particularly among women and younger patients. As PHC systems move toward person-centered care, addressing mental health as a comorbid component is critical for improving overall health outcomes.

Given the variability in disease patterns by age and gender, as also noted by Pati et al. (2017) and Tan et al. (2020), it is clear that a one-size-fits-all approach in PHC is inadequate. Disease management protocols should be stratified by demographic characteristics to better align with patient needs, reduce health disparities, and improve clinical efficiency.

Conclusion

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This study identified respiratory, cardiovascular, and endocrine disorders as the leading health issues in primary health care settings, with clear demographic differences in disease patterns. The findings reinforce the urgent need for integrated, gender- and age-sensitive care models and emphasize the role of PHC in managing both acute and chronic conditions. Enhancing the scope of PHC to include mental health and dermatological services, guided by local epidemiological data, can significantly improve care delivery and health outcomes.

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