

Comprehensive Health Data Analysis in Pakistan

Scenario

In this case study, you will analyze a comprehensive health dataset from various hospitals across Pakistan. The provided dataset represents detailed information on patient visits, including personal and medical data. Your task is to explore patient demographics to understand the distribution of age, gender, height, and weight across different hospitals. You will evaluate disease prevalence to identify the most common conditions treated and their distribution across various cities and provinces. Additionally, you will assess treatment costs to understand the financial burden on patients, focusing on comparisons between those with and without insurance. The analysis will also involve comparing hospital performance based on patient volume and treatment costs, identifying peak times for admissions and discharges, and examining the impact of insurance coverage on healthcare expenses. By studying the distribution of blood groups and gaining geographical insights, you will uncover patterns and correlations that can inform healthcare providers and policymakers, ultimately contributing to improved healthcare services and outcomes in Pakistan. Use the provided questions and pivot tables in Excel to summarize and analyze the data effectively.

Dataset Description

The dataset contains 2000 rows and 15 columns, representing health-related data from various hospitals in Pakistan. Each row corresponds to a patient's visit to a hospital, including personal and medical information. Here are the details of each column:

Hospital Name: Name of the hospital where the patient was treated.

Patient Name: Full name of the patient.

Age: Age of the patient in years.

Gender: Gender of the patient (Male or Female).

Date of Admission: Date when the patient was admitted to the hospital (YYYY-MM-DD format).

Date of Discharge: Date when the patient was discharged from the hospital (YYYY-MM-DD format).

Disease: The primary disease or condition for which the patient was treated.

Treatment Cost: Cost of the treatment in PKR (Pakistani Rupees).

Insurance: Whether the patient had insurance coverage (Yes or No).

Blood Group: Blood group of the patient.

Height (cm): Height of the patient in centimeters.

Weight (kg): Weight of the patient in kilograms.

Contact Number: Contact number of the patient.

City: City where the patient resides.

Province: Province where the patient resides.

Objective:

- Analyze patient demographics to understand the age, gender, height, and weight distribution across various hospitals.
- Evaluate disease prevalence to identify the most common diseases treated in hospitals and their distribution across different cities and provinces.
- Examine healthcare costs by assessing the treatment costs associated with different diseases and hospitals, and understanding the financial burden on patients with and without insurance.
- Study hospital performance by comparing patient volume, treatment costs, and other key metrics across hospitals.
- Identify patterns in hospital admissions and discharges to determine peak times and optimize resource allocation and management.
- Conduct an insurance coverage analysis to understand the percentage of patients with insurance coverage and its impact on treatment costs.
- Explore the distribution of blood groups among patients and its relevance to healthcare services.
- Gain geographical insights into patient distribution and healthcare needs across different cities and provinces in Pakistan.
- Investigate potential correlations between patient demographics (e.g., age) and treatment costs.
- Enable data-driven decision making for healthcare providers, policymakers, and researchers to improve healthcare services and outcomes in Pakistan.

Here are a Few Questions to Help You with Your Analysis

1. Hospital Statistics: What is the distribution of patients across different hospitals?
2. Disease Frequency: What are the most common diseases treated in these hospitals?
3. Age Distribution: What is the age distribution of patients in each hospital?
4. Gender Ratio: What is the gender ratio of patients for each disease?
5. Treatment Cost Analysis: What is the average treatment cost for each disease?
6. Insurance Coverage: What percentage of patients had insurance coverage?
7. Blood Group Distribution: What is the distribution of blood groups among the patients?
8. City-wise Patient Count: How many patients are from each city?
9. Province-wise Patient Count: How many patients are from each province?
10. Admission and Discharge Dates: What are the peak times for admissions and discharges in each hospital?
11. Height and Weight Statistics: What is the average height and weight of patients in each hospital?
12. Treatment Cost by Hospital: How does the average treatment cost vary across different hospitals?
13. Patient Age vs. Treatment Cost: Is there a correlation between the age of patients and the treatment cost?
14. Treatment Cost by Hospital: How does the average treatment cost vary across different hospitals?
15. Patient Age vs. Treatment Cost: Is there a correlation between the age of patients and the treatment cost?
16. Disease by City: What are the most common diseases in each city?
17. Hospital Performance: Which hospital has the highest average treatment cost and which has the lowest?

These questions can be addressed using pivot tables in Excel to summarize and analyze the data effectively, providing valuable insights for healthcare analysis and decision-making.