



Comprehensive Health Data Analysis in Pakistan

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Cohort 7 - Blue*

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INTRODUCTION

Welcome to the intriguing case study that delves into a comprehensive health dataset sourced from diverse hospitals scattered across Pakistan. Within this dataset lies a wealth of information encapsulating the intricacies of patient visits, encompassing both personal and medical details.

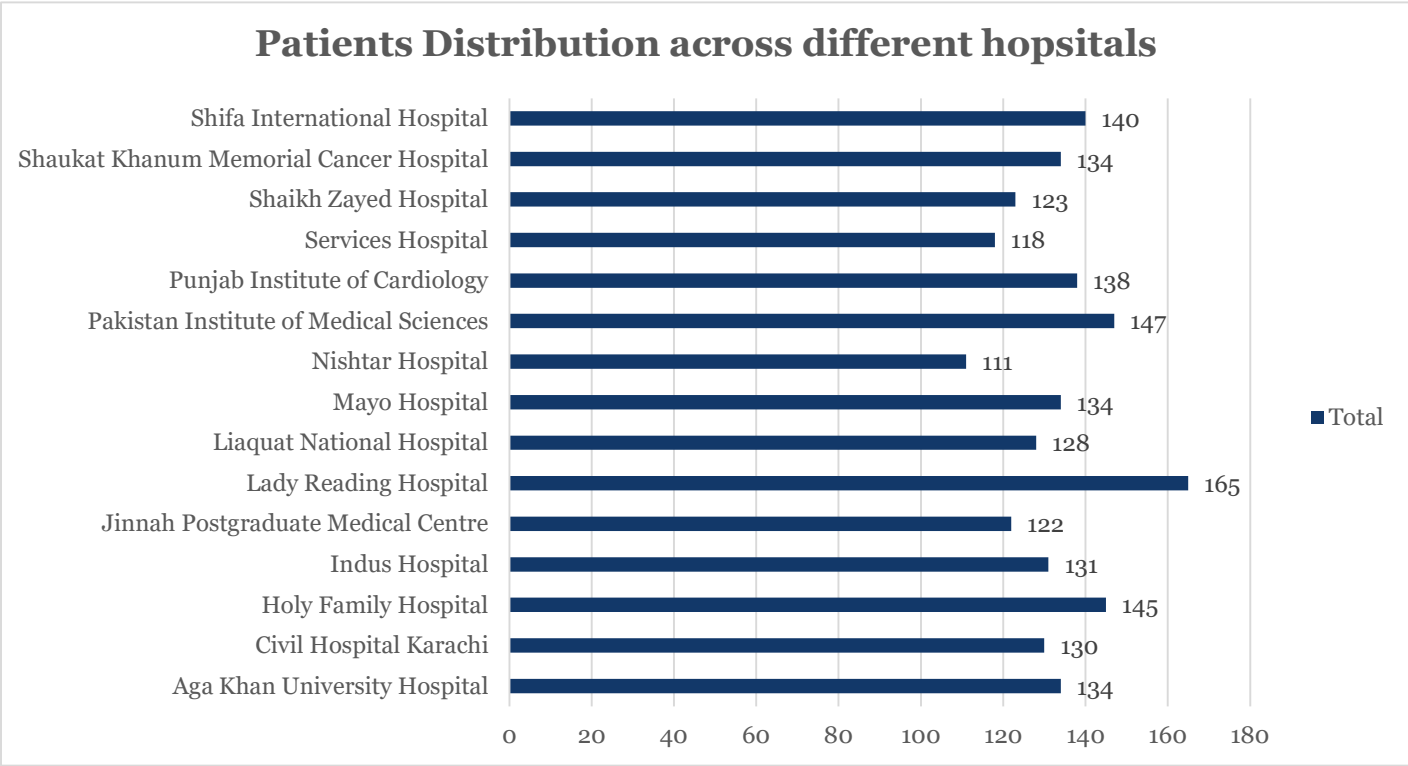
As we navigate through the data, our focus will shift towards deciphering disease prevalence, aiming to unearth the most prevalent conditions treated and their dispersion across the vast expanse of cities and provinces within Pakistan. Furthermore, our analysis will extend to scrutinizing treatment costs, with a keen eye on discerning the financial implications borne by patients, with a particular emphasis on contrasting scenarios between those with and without insurance coverage.

As we delve into the dataset, we will uncover valuable insights into hospital performance metrics by comparing patient volume and treatment costs. By identifying peak periods for admissions and discharges, we will gain a deeper understanding of the dynamics within the healthcare system. Additionally, examining the impact of insurance coverage on healthcare expenditures will reveal the complex interplay between financial security and medical costs. Analyzing the distribution of blood groups and geographical patterns will unearth correlations that can inform decision-making for healthcare providers and policymakers, aiming to enhance healthcare services and outcomes in Pakistan.

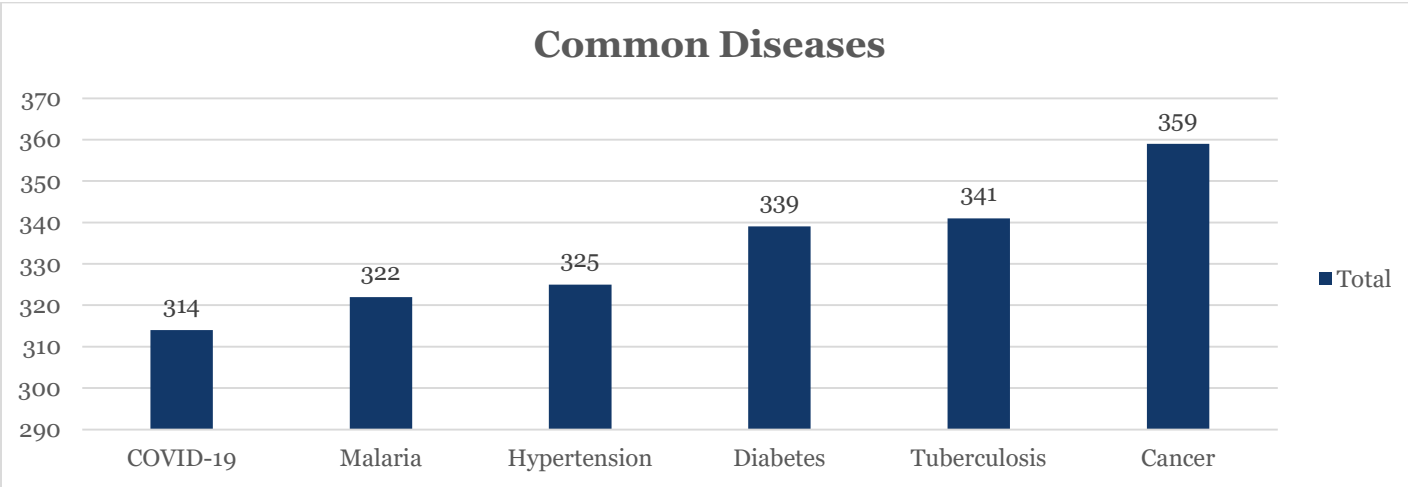
Our analysis goes beyond academia, offering actionable insights that can shape the future of healthcare delivery in Pakistan, empowering stakeholders in the healthcare domain to make informed decisions for a more effective and efficient healthcare system.



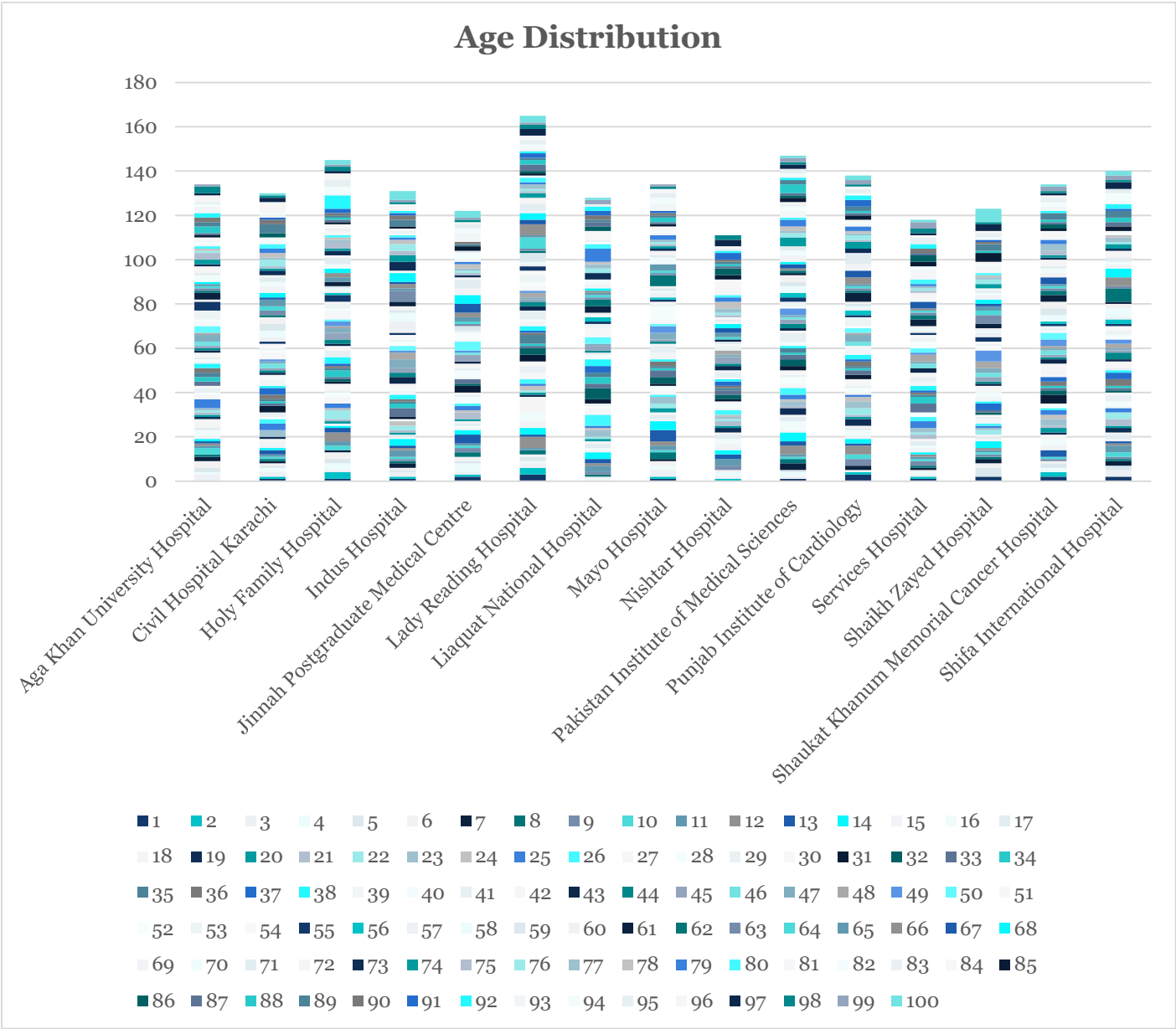
Hospital Statistics: Analyzing patient distribution across different hospitals



Disease Frequency: Identifying common diseases treated in hospitals



Age Distribution: Examining the age distribution of patients in each hospital.



Gender Ratio: Investigating the gender ratio of patients for each disease.

Diseases	Female	Male	Grand Total
Cancer	51.53%	48.47%	100.00%
COVID-19	51.27%	48.73%	100.00%
Diabetes	49.56%	50.44%	100.00%
Hypertension	47.69%	52.31%	100.00%
Malaria	50.93%	49.07%	100.00%
Tuberculosis	47.80%	52.20%	100.00%
Grand Total	49.80%	50.20%	100.00%

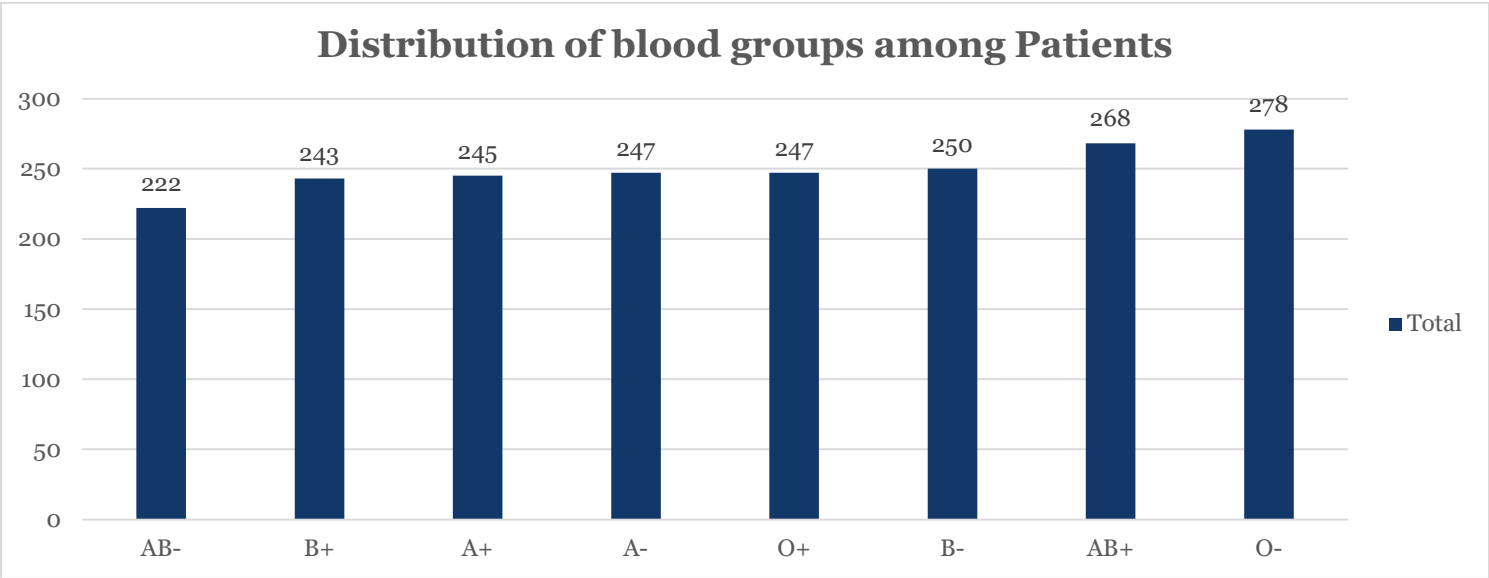
Treatment Cost Analysis: Determining average treatment costs for each disease.

Diseases	Average of Treatment Cost	
Cancer	PKR	249,269
COVID-19	PKR	241,036
Diabetes	PKR	252,040
Hypertension	PKR	250,396
Malaria	PKR	248,505
Tuberculosis	PKR	247,079
Grand Total	PKR	248,132.64

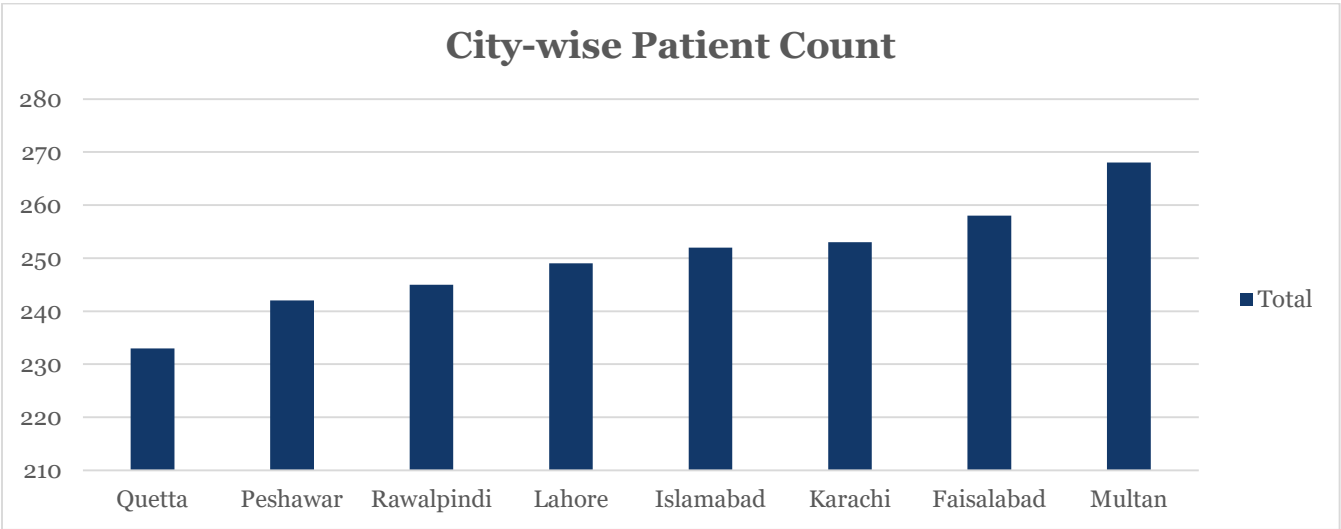
Insurance Coverage: Assessing the percentage of patients with insurance.

Insurance	Count of Patient Name
Yes	50.70%
No	49.30%
Grand Total	100.00%

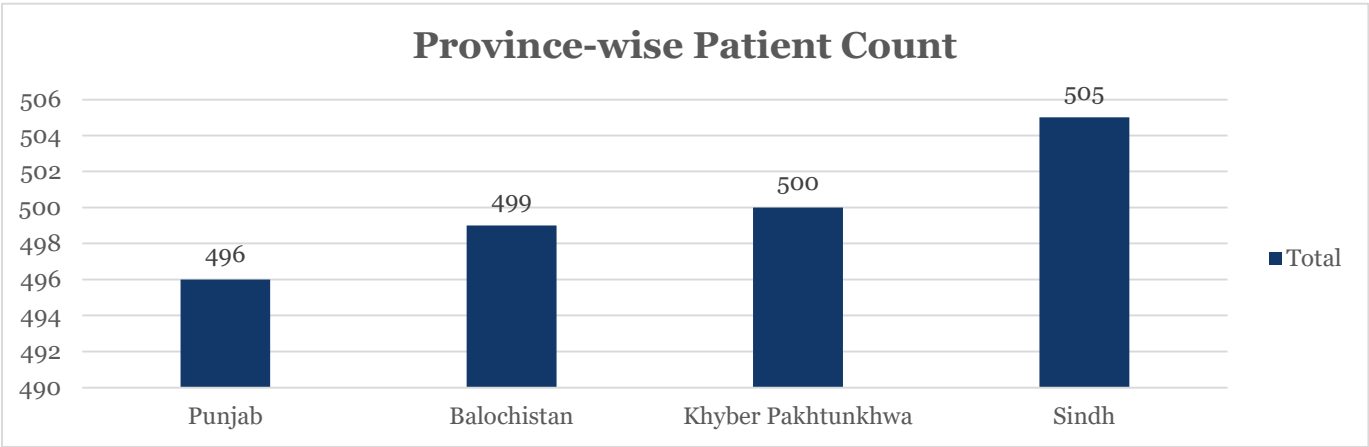
Blood Group Distribution: Exploring the distribution of blood groups among patients.



City-wise Patient Count: Estimating patient counts from each city.



Province-wise Patient Count: Tracking patient counts from each province.



Admission and Discharge Dates: Recognizing peak times for admissions and discharges.

Hospitals	Max of Date of Admission	Max of Date of Discharge
Services Hospital	11/3/2023 0:00	12/25/2023 0:00
Pakistan Institute of Medical Sciences	12/4/2023 0:00	12/27/2023 0:00
Punjab Institute of Cardiology	11/8/2023 0:00	12/27/2023 0:00
Aga Khan University Hospital	10/28/2023 0:00	12/27/2023 0:00
Shifa International Hospital	11/19/2023 0:00	12/27/2023 0:00
Shaikh Zayed Hospital	11/28/2023 0:00	12/27/2023 0:00
Nishtar Hospital	12/22/2023 0:00	12/27/2023 0:00
Shaukat Khanum Memorial Cancer Hospital	11/24/2023 0:00	12/27/2023 0:00
Mayo Hospital	11/9/2023 0:00	12/28/2023 0:00
Lady Reading Hospital	11/25/2023 0:00	12/28/2023 0:00
Liaquat National Hospital	11/24/2023 0:00	12/28/2023 0:00
Jinnah Postgraduate Medical Centre	12/25/2023 0:00	12/28/2023 0:00
Civil Hospital Karachi	11/11/2023 0:00	12/28/2023 0:00
Indus Hospital	12/17/2023 0:00	12/28/2023 0:00
Holy Family Hospital	11/22/2023 0:00	12/28/2023 0:00

Height and Weight Statistics: Calculating average height and weight of patients in each hospital.

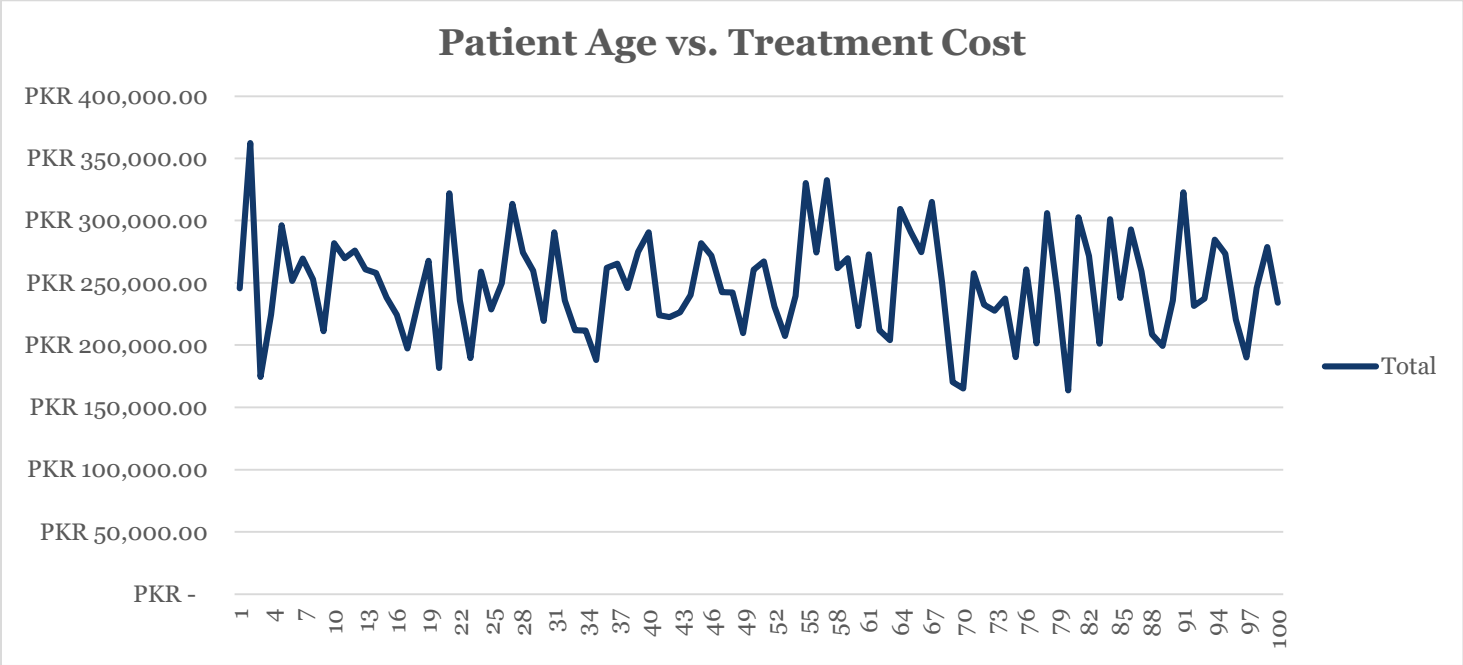
Hospitals	Average of Height (cm)	Average of Weight (kg)
Civil Hospital Karachi	171.13	76.78
Shifa International Hospital	171.14	77.69
Liaquat National Hospital	171.64	77.85
Mayo Hospital	170.61	78.45
Services Hospital	171.11	78.78
Punjab Institute of Cardiology	171.40	78.81
Holy Family Hospital	170.94	79.41
Indus Hospital	171.28	79.56
Pakistan Institute of Medical Sciences	169.74	80.10
Jinnah Postgraduate Medical Centre	170.86	80.34
Shaikh Zayed Hospital	168.41	80.79
Nishtar Hospital	168.84	80.79
Aga Khan University Hospital	169.05	80.90
Lady Reading Hospital	168.07	81.27
Shaukat Khanum Memorial Cancer Hospital	170.67	84.22

Treatment Cost by Hospital: Contrasting average treatment costs across different hospitals.

Hospitals	Average of Treatment Cost
Civil Hospital Karachi	PKR 226,452.45
Indus Hospital	PKR 228,395.66
Nishtar Hospital	PKR 236,581.58
Pakistan Institute of Medical Sciences	PKR 236,606.92
Punjab Institute of Cardiology	PKR 239,104.75
Shifa International Hospital	PKR 239,465.75
Holy Family Hospital	PKR 241,187.82
Jinnah Postgraduate Medical Centre	PKR 244,358.89
Liaquat National Hospital	PKR 252,571.87
Shaikh Zayed Hospital	PKR 258,268.53
Lady Reading Hospital	PKR 259,920.26
Services Hospital	PKR 260,239.19
Aga Khan University Hospital	PKR 264,980.04
Shaukat Khanum Memorial Cancer Hospital	PKR 265,875.14
Mayo Hospital	PKR 266,666.36

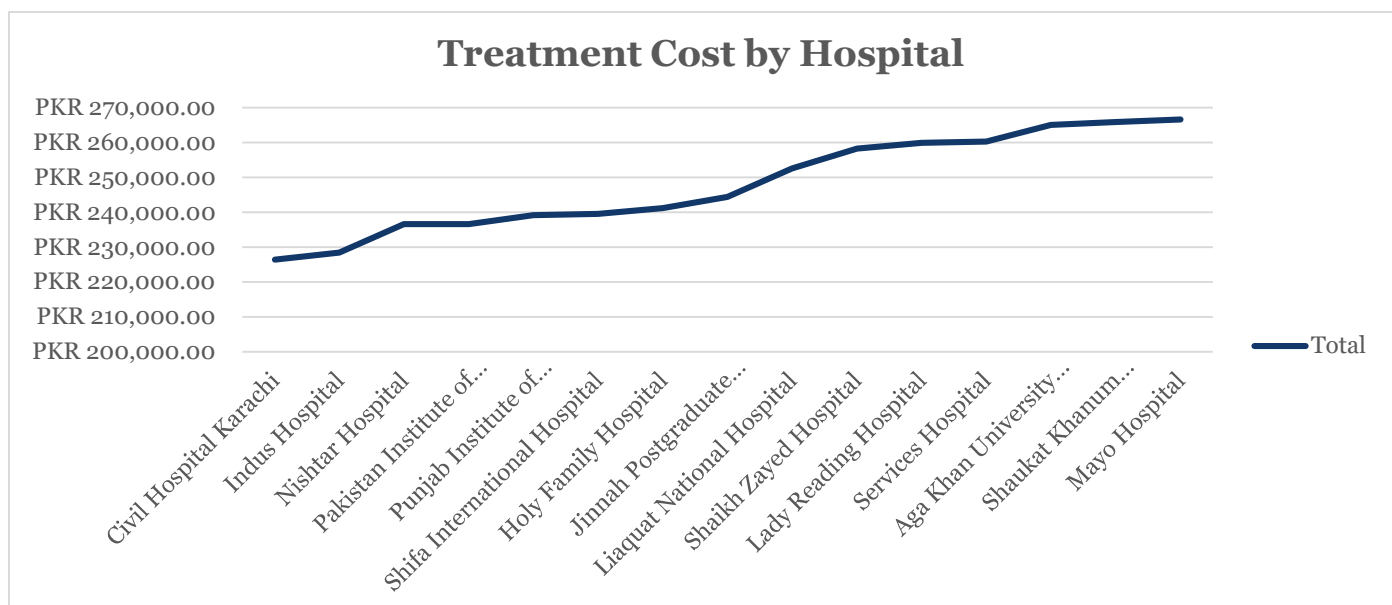
Patient Age vs. Treatment Cost: Investigating correlations between patient age and treatment cost.

The relationship between patient age and treatment cost appears to be highly variable and does not show a clear linear or easily discernible correlation. The costs fluctuate significantly across all age groups.



Hospital Performance: Highlighting hospitals with highest and lowest average treatment costs.

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Disease by City: Unveiling prevalent diseases in each city.

City	Cancer	COVID-19	Diabetes	Hypertension	Malaria	Tuberculosis
Faisalabad	46	33	53	37	42	47
Islamabad	38	46	48	43	43	34
Karachi	45	45	39	39	33	52
Lahore	40	41	36	49	39	44
Multan	55	33	50	37	49	44
Peshawar	36	37	36	46	45	42
Quetta	62	34	26	33	35	43
Rawalpindi	37	45	51	41	36	35

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In conclusion, the analysis of the healthcare dataset in Pakistan has revealed key insights that can drive strategic improvements in healthcare delivery. By understanding hospital statistics, patient demographics, treatment costs, and other factors, stakeholders can make informed decisions to enhance efficiency and patient outcomes. These findings serve as a valuable roadmap for optimizing resources and promoting better health outcomes across the healthcare system.

- Conclusion