

**Aqeel Hayder Kazmi<sup>1</sup>, Imran Khan Sandeelo<sup>2</sup>, Syed Hassan Abbas Rizvi<sup>3</sup>, and Sunaina Arshad<sup>4</sup>**

**ABSTRACT**

The expense of healthcare has increased over the past few decades all over the world, especially in Pakistan. This trend is mostly rising due to a lack of health-related awareness, changing lifestyles, and the high cost of health technology. To investigate the effects of inflation on the healthcare of the middle class & to understand the particular difficulties they encounter as a result of increasing costs. This cross-sectional study was conducted at Liaquat National Hospital and Medical College, Karachi, among middle-class people visiting for their medical care from August 2024 to February 2025. Statistical analysis was done by IBM SPSS Statistics v27. The demographic profile reveals that among 386 participants, a significant portion of the participants were male (56.7%), primarily over the age of 40 (48.4%), and most had monthly incomes ranging from 20,000 to 69,000 PKR (77.2%). The study identified that inflation has significantly affected healthcare access: 48.4% of participants minimized doctor visits, 40.9% shortened their prescriptions, and 57.8% delayed hospitalizations due to high medical costs. The financial load on healthcare utilization is evident, due to the cost-related concerns; 81.1% of participants postponed medical treatment. These findings highlighted the significant impact of inflation on healthcare access and the financial stability of Pakistan's middle-class families. The minimization of healthcare services utilization is determined by affordability challenges and highlights the urgent need for structured reforms.

**Keywords:** Inflation, Health Outcome, Middle Class, Financial Burden, Reduced Treatment

**INTRODUCTION**

The expense of healthcare has increased over the past few decades all over the world, especially in Pakistan. This trend is mostly rising due to a lack of health-related awareness, changing lifestyles, and the high cost of health technology (Balkhi et al., 2021). Due to the country's rapid population growth, steadily rising senior population, and rising frequency of chronic, non-communicable diseases, Pakistan's healthcare institutions are finding it extremely difficult to meet the country's rising healthcare demand. Inflation is a significant issue for economic managers, as it can hinder development. Therefore, more efforts should be made to improve the macroeconomic factors (Rehman et al., 2022).

The ongoing rise in health spending has made it necessary to recognize the effects on certain health outcomes as well as the most effective way to use the limited resources available (World Health Organization, 2022). It is thought that a country's healthcare system may be more effective if its population experiences better health outcomes, and it may be less effective if its population experiences worse health outcomes (Nutbeam & Lloyd, 2021).

<sup>1</sup> Sr. Manager, Social Services and Patient Affairs Department, Liaquat National Hospital and Medical College, Karachi, Sindh, Pakistan.

<sup>2</sup> Cardiac Consultant, Liaquat National Hospital and Medical College, Karachi, Sindh, Pakistan. Email: [imran.sandeelo@lnh.edu.pk](mailto:imran.sandeelo@lnh.edu.pk)

<sup>3</sup> General Manager, Rehabilitation Services, Liaquat National Hospital and Medical College, Karachi, Sindh, Pakistan. Email: [hasan.abbas@lnh.edu.pk](mailto:hasan.abbas@lnh.edu.pk)

<sup>4</sup> Complaint Coordinator, Liaquat National Hospital and Medical College, Karachi, Sindh, Pakistan. Email: [sunaina.arshad@lnh.edu.pk](mailto:sunaina.arshad@lnh.edu.pk)

**Corresponding Author:** Aqeel Hayder Kazmi, Email: [aqeel.haider@lnh.edu.pk](mailto:aqeel.haider@lnh.edu.pk)



Numerous studies that look at the relationship between healthcare spending and health outcomes in industrialized and developing nations have examined the effect of overall health expenditure on the national economy (Rana et al., 2020). According to Knapp (2023), in a lower-middle-income country like Pakistan, the World Bank defines the “middle class” as an individual who earns between \$10 and \$40 per day. This adds up to about \$300- \$1200 a month. As per today’s exchange rate, that value is somewhere between Rs. 65,000 to 266,000. When June 2019 started, the same World Bank definition meant an income range of Rs. 44,000-176,000. Despite the soaring inflation rate in the us economy, one industry remains secure: healthcare. Recently, economic-wide inflation sits at 6%, while for medical care, inflation is only at 2.3%. According to the government of Pakistan’s Ministry of Planning, Development, and special initiatives, the consumer price index (cpi) inflation as a national for healthcare was 193.13% in 2023 and 234.60% in 2024, indicating a percentage change of 21.47%. In urban areas, the cpi inflation for healthcare was 190.17% in 2023 and 234.721% in 2024, with a percentage change of 23.43%. In rural areas, the cpi inflation for healthcare was 196.06% in 2023 and 234.481% in 2024, showing a percentage change of 19.60% (Ministry of Planning, Development and Special Initiatives Pakistan, 2024) previous research told that 46% of families postponed their medical or dental care in Pakistan (Ray & Gudmunson, 2017). Another research showed that 61% of middle-class people delayed medical treatment due to inflation (Molina et al., 2015) so this research aims to find out the impact of inflation on the healthcare of middle-class people in Pakistan.

## OBJECTIVES

The current study efforts to accomplish the following objectives:

1. To investigate the effects of inflation on the healthcare of the middle class.
2. To understand the particular difficulties, they encounter as a result of increasing costs.

## RESEARCH QUESTIONS

1. How does inflation affect the frequency of doctor visits, medication purchases, and hospitalizations among the middle class in Pakistan?
2. What is the relationship between inflation and financial stress or reduction in healthcare savings among middle-income households?
3. Which factors (e.g., high medical costs, lack of insurance, limited facilities etc.) most significantly restrict healthcare access for middle-class individuals?
4. What is the statistically significant association between monthly income levels and the ability to save for healthcare expenses during inflationary periods?

## LITERATURE REVIEW

Economic inflation has long been recognized as a major determinant of health inequality, particularly in developing countries (Ali et al., 2023). Similar disparities have been observed across other developing economies, where inflation exacerbates income-based inequities in access to healthcare and social welfare (Abdullah, 2024). Inflation reduces household purchasing power, forcing individuals to make trade-offs between healthcare and other basic needs (World Bank, 2024). According to a recent cross-country review, the middle class in South Asian economies has become increasingly vulnerable to health shocks due to escalating medical costs and the lack of comprehensive insurance systems (Rahman & Siddiqui, 2025). In Pakistan, Healthcare Inflation rises due to import dependency, insufficient government funding, and weak regulatory oversight of private sector pricing (Ahmed & Raza, 2023). As a significance, hospital facilities, laboratory testing, and pharmaceutical charges have increased at a faster frequency than average customer inflation. The Pakistan Bureau of Statistics (2024) stated that the healthcare constituent of the customer price index increased by over 21 % between 2023 and 2024.

Researchers have discovered an association between inflation and health outcomes across various contexts. A study by Malik and Turner (2024) confirmed that continued inflation leads to delayed medical consultations, reduced preventive care, and higher charges of untreated enduring illness. Equally, Nguyen et al. (2025) recognized a 15–20 % decline in outpatient visits among middle-income households during inflationary cycles in Southeast Asia. Internationally, the World Health Organization (2023) has highlighted that financial unpredictability and inadequate social defense mechanisms rise the risk of “catastrophic health expenditures,” mostly in the group of weak middle-incomes. Chaudhry and Usman (2025) support this sight, highlighting that Pakistan’s middle-class families experience a paradoxical situation: they are disqualified for public subsidies yet unable to afford private insurance.

Existing literature also recommends that inflation affects the quality of healthcare distribution. When hospitals and clinics face cost burdens, they might reduce staff, postpone equipment advancements, or increase the fees (Rehman et al., 2022). These unintended effects together lower healthcare quality and suitability.

The existing evidence consistently points to one conclusion that inflation exacerbates both the economic and psychological burdens of healthcare. However, few studies have quantified these effects specifically for Pakistan's middle class. A gap this research seeks to address a gap through empirical data collected at Liaquat National Hospital.

## MATERIALS AND METHODS

This cross-sectional study was conducted at Liaquat National Hospital and Medical College, Karachi, from August 2024 to February 2025. Middle-class individuals of either gender, aged 18 years or above, who visited Liaquat National Hospital for medical care were included in the study. Individuals from upper and lower socioeconomic classes, as well as those below 18 years of age, were excluded. Informed consent was obtained from all participants, and the study was conducted after receiving ethical approval from the institute. Using a prevalence (p) of 46% based on previous literature, with a 95% confidence interval and a 5% margin of error, the required sample size was calculated using the online calculator openEpi. The researcher had applied the chi-square or Fisher's exact test to find out the relations between qualitative variables. A p-value of less than 0.05 was considered statistically significant.

## RESULTS

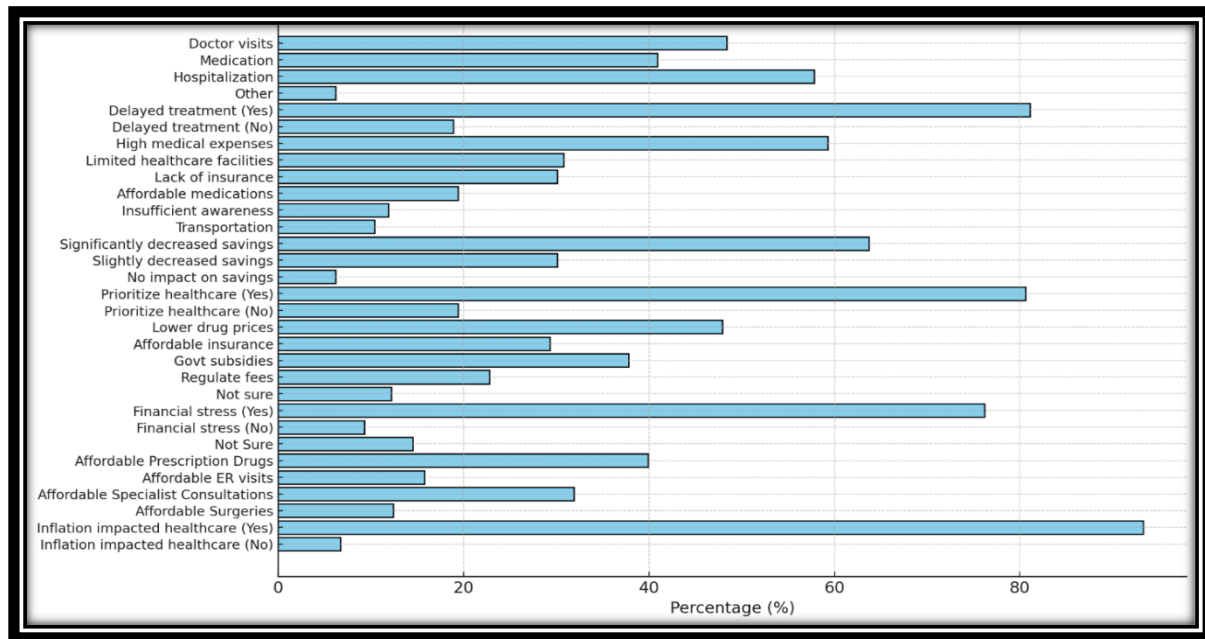
The data was collected from 386 participants, and the demographic profile shows that mostly participants were male (56.7%) and were over 40 (48.4%), and their monthly income oscillated at 77.2% from Rs. 20,000-Rs. 69,000. Moreover, the participants who were uneducated are 22.8% with the marital status of 67.9%. Various groups were mentioned in the demographic information, with less income, no education, and individuals who are married (Table 1).

*Table 1: Demographic Profile of Study Participants (N=386)*

Category	Subcategory	Frequency (%)
Gender	Male	219 (56.7%)
	Female	167 (43.3%)
Age	18-25 years	104 (26.9%)
	26-30 years	33 (8.5%)
	>40 years	187 (48.4%)
Income (PKR)	20,000-69,000	298 (77.2%)
	70,000-119,000	50 (13%)
Education	Illiterate	88 (22.8%)
	Graduate	73 (18.9%)
Marital status	Married	262 (67.9%)
	Unmarried	105 (27.2%)
No of children	None	30 (10.7%)
	>3 children	97 (34.5%)

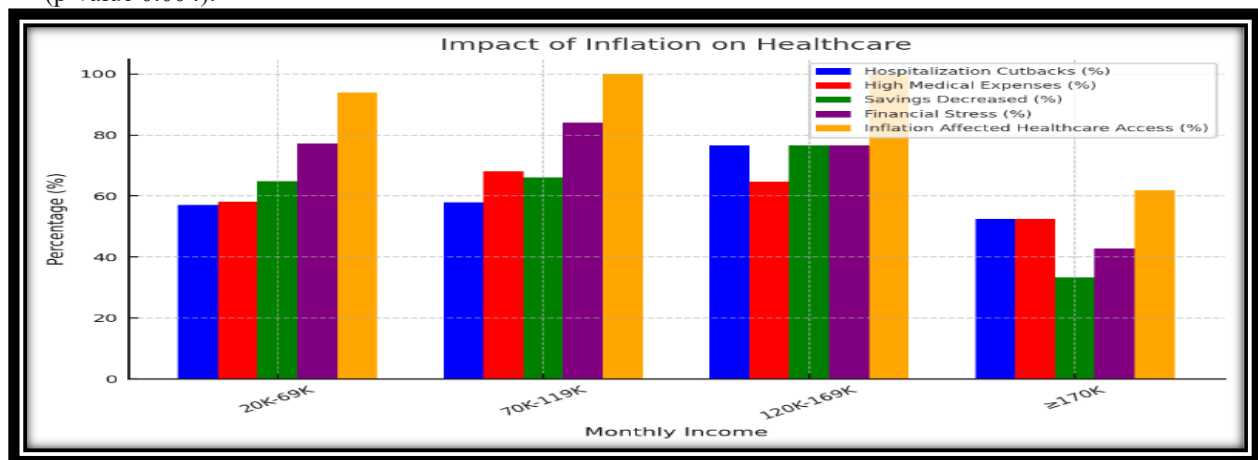
This research shows that inflation creates a solid impact on access to healthcare. As 48.4% participants condensed doctor visits, 40.9% were whose prescriptions was cutback, and 57.8% people were postponed their hospitalization just because of cumulative charges. The suggestion after these findings is that financial constraints limit access to healthcare. The financial burden on the healthcare selection is clear because due to the concern of costs, 81.1% of the participants delayed their medical treatment. Substantial tasks like the expenses of high medical (59.3%), insufficient facilities of healthcare (30.8%), and insufficient coverage of the healthcare (30.1%), the issues showed a

severe difficulty with the cost structure of healthcare. Inflation reduced the healthcare savings of the participants significantly by 63.7%. Furthermore, 76.2% of the participants stated that healthcare prices are the major source of financial anxiety. The research mentioned that the substantial financial burden is modelled by the expenditures of healthcare. Mostly participants (93.3%) approved that inflation pretentious significantly their ability to admittance the quality of healthcare, 80.6% participants declaring that the middle class is disproportionately affected compared to other communal groups. Participants recommended numerous measures in order to decrease the expenses of healthcare, like dropping the prescription drug prices (47.9%), increasing government subventions for healthcare (37.8%), and increasing admittance to affordable insurance plans (29.3%) (Graph 1).



Graph 1: Effects of Inflation on Healthcare Access and Financial Priorities of the Middle-Class in Pakistan

Graph 2 shows a significant association between monthly income-related effects of inflation and the ability to save for healthcare expenses (p-value 0.007). Healthcare costs are a major source of financial stress (p-value 0.002), and inflation has significantly impacted access to quality healthcare (p-value 0.001). There is also a significant association of health insurance-related effects of inflation on healthcare access and financial priorities (p-value 0.004).



Graph 2: Monthly Income-Vise Effects of Inflation on Healthcare Access and Financial Priorities

The study was conducted to determine the overall effects of inflation on healthcare on the middle class in Pakistan. A comparative analysis had been done between this study and the other study, which covered effects with respect to numerous variables (De Siqueira Filha et al., 2022). The study determined a great economic burden and wealth-related problems. Rural areas faced greater direct costs for accessing health care for acute and lower costs for chronic and unspecified health conditions. Whereas healthcare expenses for chronic health conditions among the rich were the highest. While this research showed majority of the middle class faces a greater effect of inflation on their healthcare expenses.

Inflation had an immense influence on the facilitation of healthcare services, which caused chronic damage to the unprivileged (Buheji, 2022). Similarly, in this research, it was studied that inflation affected the ability to save for healthcare expenses, such as the poor being unable to save their savings. In addition to this, healthcare costs are a major source of financial stress.

Patients face the burden of economy-wide inflation through longer waiting times, fewer amenities, higher user charges, balanced billing, fewer services, and/or substandard care when healthcare providers are not compensated for higher costs. In response, patients may: forego health services leading to unmet need; increase their use of privately financed healthcare leading to inequalities in access to care; or have to spend more out of pocket for healthcare. This could lead to greater inequalities in access to healthcare, as some individuals may not be able to afford private payments. Additionally, it may increase the risk of financial hardship for those who choose to use health services and must pay out of pocket. When providers cannot withstand inflationary pressures (i.e. if they are not adequately compensated for economy-wide price growth), part of the burden of inflation may be shifted to patients, either implicitly or explicitly (Jeurissen et al., 2024). The study highlights the substantial impact of inflation on healthcare access and the financial priorities of Pakistan's middle class. A proportion of participants is considerable and reported reducing essential healthcare services such as visits to the doctor, medications, and hospitalizations due to escalating costs. The findings advised that inflation has intensified financial stress, compelling many individuals to prioritize healthcare expenses over other essential needs. This pattern underscores the growing burden of healthcare costs as a major challenge confronting the middle-class population.

Furthermore, the lack of affordable health insurance and the high cost of medical services emerged as primary challenges in order to access healthcare. These challenges, compounded by the limited availability of healthcare facilities and the insufficient support of the government, reveal systemic deficiencies in addressing the healthcare needs of the middle class. The notable decline in personal savings reported by many participants further indicates that inflation has weakened financial stability, leaving individuals increasingly vulnerable to unforeseen medical emergencies.

## CONCLUSION

The study concluded and emphasized the reflected impact of inflation on the admittance of healthcare and the financial reliability in Pakistan for middle-class people. Healthcare consumption decreases just because of the concerns of cost, which needs urgent improvement in the system. After facing these challenges, we need multiple approaches like policy interventions, improvement in the coverage of insurance, and the education of public health. The government and the related stakeholders can alleviate the financial loss on the families of middle class and ensure neutral access to excellence.

## RECOMMENDATIONS

Based on the study findings, the following recommendations are proposed:

1. The government must introduce a middle-class health insurance program to decrease the burden of expenses sponsored by the government.
2. Reinforce cooperation between public and private divisions to enlarge access to affordable healthcare.
3. Encourage consciousness operations on lifestyle alteration and early illness screening programs to decrease the cost of treatment.
4. Implement regular reviews of medication ratings to avoid unfair price inflation.
5. The government must control private healthcare pricing and ensure transparency in the practice of hospital billing.



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