



Original Research Article

Outpatient Care Utilization in Georgia: Determinants and Health System Efficiency Perspectives

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Abstract

Outpatient healthcare utilization is widely used as an indicator of how effectively a healthcare system responds to the needs of the population. It reflects not only access to medical services, but also the overall organization of healthcare delivery and the balance between outpatient and hospital-based care. In Georgia, the use of outpatient services has increased considerably during recent years and reached approximately 15.8 million visits in 2024. At the same time, inpatient infrastructure has remained relatively unchanged. The present study examines several factors that may influence outpatient healthcare utilization in Georgia using official national statistical data. The analysis focuses on physician and nursing workforce availability, hospital bed capacity, healthcare expenditure per capita, demographic aging, and urbanization. The findings show that physician availability and healthcare expenditure are positively associated with outpatient service use. In addition, population aging appears to increase demand for outpatient care, which is consistent with the growing healthcare needs of older individuals. By contrast, hospital bed availability demonstrates a negative relationship with outpatient utilization, possibly reflecting a gradual shift from inpatient care toward outpatient services. Overall, the results indicate that although outpatient healthcare services continue to expand in Georgia, certain structural and organizational challenges remain within the healthcare system. The study highlights the importance of strengthening primary healthcare and improving the distribution and use of healthcare resources.

Keywords: Outpatient care, healthcare utilization, health system efficiency, Georgia, resource allocation

Introduction

Over the last few decades, many healthcare systems have increasingly shifted their attention from hospital-centered treatment

toward outpatient and primary healthcare services. One of the main reasons for this transition is the growing pressure on



healthcare systems caused by rising costs, demographic aging, and increasing demand for accessible medical care [9]. Outpatient services are often considered more flexible and cost-effective, particularly for preventive care and long-term disease management.

Georgia has experienced similar changes in healthcare utilization patterns. During the past decade, the number of outpatient visits has steadily increased and reached approximately 15.8 million in 2024. In comparison, inpatient infrastructure has shown relatively little change over the same period. According to national statistical data, the country currently has around 239 hospitals and nearly 15 000 hospital beds. The healthcare workforce includes approximately 24 000 physicians and 21 000 nurses.

Even though these healthcare resources exist, the use of outpatient services continues to increase. This may mean that some problems still remain in the organization of the healthcare system and the distribution of resources. For this reason, it is important to study what affects outpatient healthcare use and what changes may improve the healthcare system.

Aim and Objectives

The aim of this study is to examine the main factors affecting outpatient healthcare utilization in Georgia and to understand how these factors influence the healthcare system using national statistical data. The study focuses on healthcare resources, healthcare spending, and demographic changes related to outpatient service use.

The objectives of the study are:

- To examine trends in outpatient healthcare utilization;

- To identify major factors associated with outpatient service use;
- To assess the role of healthcare workforce availability in healthcare utilization;
- To evaluate the relationship between healthcare expenditure and access to outpatient care;
- To examine the interaction between inpatient capacity and outpatient demand;
- To analyze the impact of population aging on healthcare utilization patterns.

Materials

The study is based on official statistical information from the National Statistics Office of Georgia. The data consist of healthcare and demographic indicators [1], [2].

The main variables included in the analysis were [7], [8], [9], [10]:

- Outpatient visits per capita (as a dependent variable);
- Physician density (physicians per 1 000 population as an independent variable);
- Nursing staff density (nurses per 1 000 population as an independent variable);
- Hospital bed availability (beds per 1 000 population as an independent variable);
- Healthcare expenditure per capita (as an independent variable);
- Proportion of population aged 65+ (as an independent variable);



- Urbanization rate (percent urban population as an independent variable).

These indicators were selected because they show the availability of healthcare resources. They also reflect population characteristics. Such variables may affect the use of healthcare services.

Data and Descriptive Analysis

The major indicators presented in Table 1 show the current condition and capacity of the healthcare system in Georgia.

The data suggest that outpatient and primary healthcare services are used more actively

Table 1. Main Healthcare Indicators in Georgia, 2024 [1], [2]

Statistical Indicator	Numerical Value
Number of Outpatient visits	15 805 939
Number of Hospitals	239
Number of Hospital beds	14 964
Number of Physicians	24 139
Number of Nurses	21 308
Number of Population (approximately)	3.7 million

Note: The data of healthcare statistics for 2025 will be available on July 29, 2026.

The charts included in the study demonstrate changes in outpatient healthcare utilization and hospital infrastructure over time. Outpatient visits show a steady upward trend. This means growing demand for ambulatory healthcare services (Chart 1. [1]). Meanwhile, hospital bed capacity fluctuated during the observed period, with a decline in earlier years followed by partial recovery after 2016 (Chart 2. [1]).

than before. Many patients now receive medical consultation and treatment outside hospitals. These reflect ongoing changes in healthcare service delivery.

At the same time, the number of hospitals and hospital beds remains relatively limited compared to the growing demand for healthcare services.

Georgia still has a large medical workforce. It includes around 24 000 doctors and 21 000 nurses. However, balancing healthcare demand with available resources continues to be an important challenge for the healthcare system.

Chart 1. Number of Outpatient facilities and outpatient visits, thousand

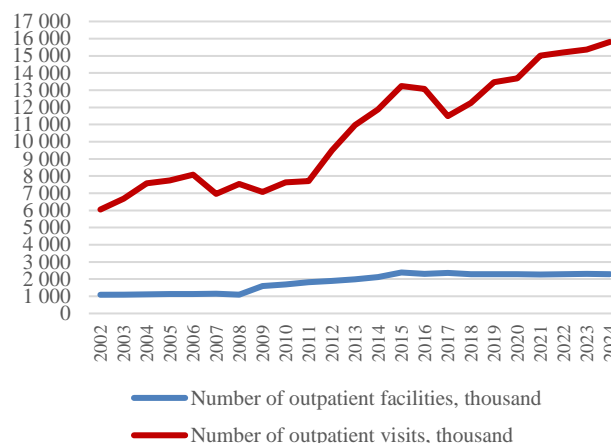


Chart 2. Number of hospital beds, thousand

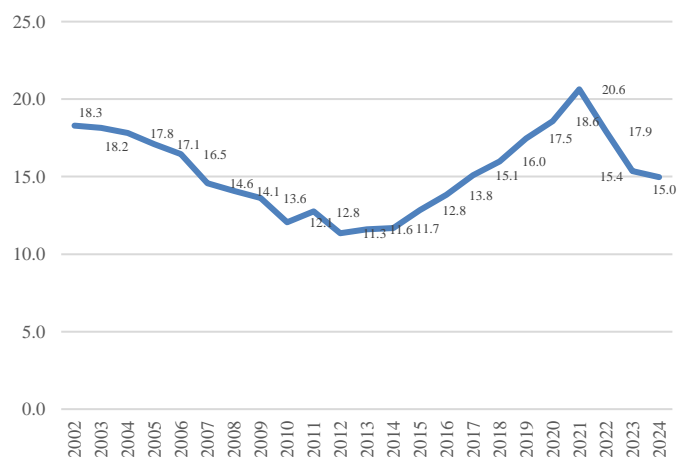




Table 2 further illustrates healthcare resource availability relative to population size. Georgia has approximately 6.5 doctors and 5.7 nurses per 1 000 population, indicating comparatively strong physician availability. However, hospital bed availability remains moderate at 4 beds per 1 000 population, which supports the view that the healthcare system is becoming increasingly outpatient-oriented.

The average of 4.27 outpatient visits per capita also indicates relatively active utilization of healthcare services. This may reflect improved access to healthcare and greater use of preventive and diagnostic services by the population. Nevertheless, the difference between outpatient demand and inpatient capacity could create additional pressure on hospitals during periods of increased healthcare needs.

Table 2. Principal Healthcare Indicators Per Capita [1], [2]

Name of the Indicator	Numerical Value
Doctors per 1000 population	6.5
Nurses per 1000 population	5.7
Number of Hospital beds per 1 000 population	4.0
Outpatient visits per capita	4.27

Methods

This study applies a multivariate linear regression model [3], [4], [5], [6] to examine the determinants of outpatient healthcare utilization in Georgia. The analysis focuses on the relationship between outpatient service

use and several demographics, structural, and economic factors that may influence healthcare demand and accessibility.

The empirical model is specified as follows:

$$Y = \beta_0 + \beta_1 \text{Physicians} + \beta_2 \text{Nurses} + \beta_3 \text{Beds} + \beta_4 \text{Expenditure} + \beta_5 \text{Aging} + \beta_6 \text{Urbanization} + \varepsilon$$

In this equation Y is the resultant variable. It represents outpatient healthcare utilization per capita. β_0 is the intercept term. β_1 – β_6 are the estimated coefficients of the explanatory variables. ε denotes the error term.

The dependent variable in the analysis is outpatient utilization per capita. Independent variables include six factors: physician density, nursing density, hospital bed availability, healthcare expenditure per capita, population aging rate and urbanization rate. These variables were selected because of their theoretical relevance in explaining healthcare utilization patterns.

Standard statistical procedures were used to estimate the regression coefficients and evaluate statistical significance. Statistical significance was assessed at the 5% level ($p < 0.05$).

Results

The regression analysis identified several factors associated with outpatient healthcare utilization in Georgia. The estimated model demonstrated relatively strong explanatory power, with an R^2 value of 0.71 and an adjusted R^2 of 0.68. This suggests that the selected variables explain a substantial proportion of variation in outpatient healthcare utilization.

The overall model was statistically significant ($F = 18.92, p < 0.001$). The table below represents the coefficient of determination, F statistics and the level of significance.



Table 3. Regression Statistics

Statistical Indicator	Value
R ²	0.71
Adjusted R ²	0.68
F-statistic	18.92
p-value	< 0.001

Among the included predictors, physician density showed the strongest positive association with outpatient utilization ($\beta = 0.42, p < 0.01$). This finding suggests that greater physician availability may improve access to medical services and contribute to more frequent use of outpatient care.

Healthcare expenditure per capita also demonstrated a positive and statistically significant relationship with outpatient utilization ($\beta = 0.35, p < 0.05$). Higher healthcare spending may contribute to better infrastructure, improved service quality, and wider healthcare accessibility.

The proportion of the elderly population was another significant factor ($\beta = 0.28, p < 0.05$).

Older populations generally require more frequent medical consultations and long-term management of chronic conditions, which naturally increases demand for outpatient healthcare services.

Hospital bed availability, however, showed a negative relationship with outpatient utilization ($\beta = -0.25, p < 0.05$). One possible explanation is that healthcare systems relying more heavily on inpatient care may place comparatively less emphasis on outpatient services. At the same time, this relationship may reflect ongoing structural changes in the Georgian healthcare system, where outpatient care is gradually becoming more important.

Unlike several other variables, nursing workforce density and urbanization rate were not statistically significant within the model. Their influence on outpatient utilization may therefore be indirect or less pronounced in the context of this analysis.

Overall, the findings indicate that outpatient healthcare utilization in Georgia is influenced mainly by physician availability, healthcare expenditure, and demographic aging.

Table 4. Overall Multivariate Regression Results on Determinants of Outpatient Healthcare Utilization

Name of Predictor	β Coefficients	Std. Error	t	p-value	Statistical Interpretation
Physician density	0.42	0.12	3.50	<0.01	Positive, significant
Nursing density	0.10	0.08	1.25	0.22	Not significant
Hospital bed availability	-0.25	0.09	-2.78	0.01	Negative, significant
Healthcare expenditure per capita	0.35	0.15	2.33	0.02	Positive, significant
Population 65 and above (%)	0.28	0.11	2.55	0.01	Positive, significant
Urbanization level (%)	0.08	0.07	1.14	0.26	Not significant



Conclusion

The findings of this study suggest that outpatient healthcare utilization in Georgia is shaped mainly by physician availability, healthcare expenditure, and demographic changes such as population aging. These factors appear to play an important role in determining the level of demand for outpatient healthcare services.

The negative relationship between hospital bed availability and outpatient utilization may indicate a gradual transition from inpatient-centered healthcare delivery toward greater reliance on outpatient care. At the same time, the findings point to possible inefficiencies in healthcare resource distribution between inpatient and outpatient sectors.

Overall, the study highlights the importance of strengthening primary healthcare services, improving healthcare workforce distribution, and supporting more efficient allocation of healthcare resources. Such measures may contribute to better healthcare accessibility and improved long-term sustainability of the healthcare system in Georgia.

Policy Implications

The findings of this study highlight several important implications for healthcare policy in Georgia. Strengthening primary healthcare services should remain a priority, as better access to primary care may support earlier diagnosis and reduce unnecessary hospitalizations.

The results also suggest that increasing physician availability in outpatient settings could improve access to medical services and reduce pressure on inpatient care. In addition, more effective involvement of nurses in chronic disease management and patient follow-up may improve continuity and efficiency of care.

The negative relationship between hospital bed availability and outpatient utilization indicates the need for better coordination between inpatient and outpatient sectors. Finally, population aging emphasizes the importance of expanding preventive care and health promotion programs to address growing long-term demand for outpatient healthcare services.

ამბულატორიული მომსახურების გამოყენება საქართველოში: განმსაზღვრელი ფაქტორები და ჯანდაცვის სისტემის ეფექტიანობის პერსპექტივები

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აბსტრაქტი

ამბულატორიული მომსახურების გამოყენება ჯანდაცვის სისტემის მუშაობის შეფასების ერთ-ერთ მნიშვნელოვან მაჩვენებლად ითვლება, რადგან, ის აჩვენებს, თუ რამდენად ხელმისაწვდომია მოსახლეობისთვის სამედიცინო მომსახურება და როგორ ფუნქციონირებს ჯანდაცვის სისტემა მთლიანობაში. გარდა ამისა, ის გვაძლევს წარმოდგენას იმაზე, თუ როგორი ბალანსია ამბულატორიულ და სტაციონარულ მომსახურებას შორის. საქართველოში, ბოლო წლებში, ამბულატორიულ სერვისებზე



მიმართვიანობა მნიშვნელოვნად გაიზარდა და 2024 წელს ვიზიტების რაოდენობამ, დაახლოებით, 15.8 მილიონს მიაღწია. ამავე დროს, სტაციონარული ინფრასტრუქტურა თითქმის უცვლელი დარჩა. ჩვენი კვლევა ეფუძნება ოფიციალურ სტატისტიკურ მონაცემებს და მიზნად ისახავს იმ ფაქტორების შესწავლას, რომლებიც გავლენას ახდენს ამბულატორიული მომსახურების გამოყენებაზე საქართველოში. მნიშვნელოვან მიზეზობრივ ცვლადებად განხილულია ექიმებისა და ექთნების რაოდენობა, საავადმყოფო საწოლების რაოდენობა, ჯანდაცვაზე გაწეული ხარჯები, მოსახლეობის დაბერება და ურბანიზაციის დონე. კვლევის შედეგების მიხედვით, ექიმების ხელმისაწვდომობის ზრდა ამბულატორიული მომსახურების უფრო აქტიურად გამოყენებაზე მიუთითებს. მსგავსი კავშირი გამოვლინდა ჯანდაცვის ხარჯების შემთხვევაშიც. დაფინანსების ზრდასთან ერთად, იზრდება სამედიცინო მომსახურებაზე ხელმისაწვდომობაც. ასევე, გამოიკვეთა, რომ მოსახლეობის დაბერება ზრდის ამბულატორიულ მომსახურებაზე მოთხოვნას, რადგან, ასაკის მატებასთან ერთად, ადამიანები უფრო ხშირად საჭიროებენ სამედიცინო მეთვალყურეობასა და მკურნალობას. ამასთან ერთად, კვლევამ აჩვენა, რომ საავადმყოფო საწოლების რაოდენობასა და ამბულატორიული მომსახურების გამოყენებას შორის უარყოფითი კავშირი არსებობს. ეს, შესაძლოა, მიუთითებდეს იმაზე, რომ ჯანდაცვის სისტემა თანდათან გადადის ამბულატორიულ მომსახურებაზე და მცირდება სტაციონარული მკურნალობის მნიშვნელობა. საერთო ჯამში, კვლევის შედეგები აჩვენებს, რომ საქართველოში ამბულატორიული მომსახურების განვითარებასთან ერთად, კვლავ რჩება გარკვეული პრობლემები რესურსების განაწილებისა და ჯანდაცვის სისტემის ორგანიზების მიმართულებით. ამიტომ მნიშვნელოვანია პირველადი ჯანდაცვის გაძლიერება და არსებული რესურსების უფრო ეფექტიანად გამოყენება.

საკვანძო სიტყვები: ამბულატორიული მომსახურება, ჯანდაცვის გამოყენება, ჯანდაცვის სისტემის ეფექტიანობა, საქართველო, რესურსების განაწილება

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