

# User Fees in Public Healthcare: A Willingness-to-Pay Study in Kerala, India

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**Abstract:** *This study examines the willingness to pay (WTP) for tertiary public healthcare services in Kerala, a state with a high prevalence of non-communicable diseases (NCDs) and significant out-of-pocket healthcare expenditures. Data were collected from in-patients at Government Medical College, Thiruvananthapuram, using structured interviews to assess the socio-economic determinants influencing WTP. The findings reveal that socio-economic variables such as age, caste, education, employment status, and economic background significantly impact WTP. Urban patients, those with higher education levels, and regular income earners were willing to pay more for improved healthcare services, while patients from economically weaker backgrounds expressed lower WTP. The study also highlights the inadequacies in the current public healthcare system, like insufficient laboratory facilities, leading to increased reliance on costly private institutions. The results underscore the potential of WTP-based user fees to enhance service quality and financial sustainability while addressing urban-rural disparities and economic inequities. However, careful policy design, including subsidies and exemptions for low-income groups, is essential to ensure affordability and accessibility. The study provides insights into sustainable healthcare financing models tailored to the socio-economic realities of Kerala.*

**Keywords:** Cost of treatment, Financing, Healthcare, User fees, Willingness-to-pay

## INTRODUCTION

The demand for healthcare services largely depends on the magnitude and severity of the health problem. In Kerala the prevalence of non-communicable diseases is high, with 382 for males and 184 for females per one lakh population whereas the national average is 272 (National Health Profile, 2018). According to the ICMR-INDIAB study, the factors influencing non-communicable diseases, the prevalence of hypercholesterolaemia, hypertriglyceridaemia, low HDL cholesterol, and high LDL cholesterol are very high in Kerala (Anjana, Ranjit Mohan et al., 2023). As a result of this high prevalence of non-communicable diseases, the demand for highly specialized tertiary healthcare services increased drastically. Besides, maintaining the health status in terms of high life expectancy, low infant and maternity mortality rate and low death rate needs equitable healthcare facilities. But the decreasing trend in the budgetary share of healthcare in the state shows the insufficiency of the entire healthcare needs of the people. This is visible in the high out-of-pocket expenditure of households for treatment. Which demands alternative healthcare financing and arise the question, how viable are user fees in ensuring equitable tertiary healthcare services in Kerala? Against this background, this paper tried to examine the viability of user fees in the tertiary health care services of Kerala.

It is noted that Kerala spends 1.1 per cent of Gross Domestic Product (GSDP) on health expenditure, which is higher than other southern states. Per capita, health expenditure in Kerala is almost four times the national average and is greater than that of the neighbouring states. However, due to the high cost of health care, the out-of-pocket expenditure is also high. Hence the state needs to find alternative methods of healthcare financing to achieve sustainability.

## REVIEW OF LITERATURE

Generally, user fees are introduced to improve the service quality, equity, efficiency and sustainability of the healthcare delivery. However, the impact of user fees on healthcare services is mixed. User fees for health care in developing countries can increase revenues, improve economic benefits, and address administrative challenges, with success in primary health projects (Griffin, C, 1988). Removing or reducing user fees increases the utilisation of curative and possibly preventive services, but may negatively impact service quality (Lagarde, M., & Palmer, N, 2008). Hence further research is needed in this field to achieve sustainability of this sector with equity and accessibility. In Africa, user fees have been identified as a major barrier to accessing healthcare services and the removal of these fees

has generally resulted in positive effects on service utilisation, making healthcare more accessible to economically disadvantaged groups (Ridde, V., & Morestin, F., 2011). Removing user fees from Africa's primary care system can reduce costs and social exclusion, but it must be done cautiously to ensure that healthcare service remains strong and affordable for everybody (Gilson, L., & McIntyre, D., 2005). User fees in India's healthcare industry resulted in a significant denial of subsidies for low-income patients and a lack of understanding regarding exemption regulations (Thakur, H, et al., 2009). User fees for basic healthcare are ubiquitous in India, with changing costs and stringent exemption regulations resulting in exclusionary effects (Roy, B., & Gupta, S, 2011). User fees in Kerala enhance medication compliance, hold patients and providers accountable for overuse, and assure economic sustainability (Godwin, 2016). These reviews showed mixed views of the user fees and there is a lack of study based on the perception of the actual user or patient.

## METHODOLOGY

This study employed Willingness to Pay (WTP) method to estimate the average amount a patient willing to pay as user fees for public healthcare services. This approach helps in evaluating new healthcare interventions by measuring the benefits in monetary terms, which can be compared against costs to inform decision-making. It is used to evaluate the capacity to pay by certain social groups and also to estimate the hypothetical monetary value of programs and specific medical interventions and treatments (Azhar et al., 2018). WTP data can inform patient cost-sharing policies, especially in publicly financed healthcare systems, by understanding consumer willingness and ability to pay for services (Tambor, M., et al., 2014). WTP estimates reveal consumer preferences and show that supplemental healthcare services are beneficial from a societal viewpoint (Johannesson, M, 1993).

Data were collected through structured interviews with 248 in-patients treated in tertiary care services, specifically at Government Medical College, Thiruvananthapuram. It is the first and largest medical College in Kerala, having all the advanced treatment and people across the state visited for advanced treatment. Since the study is based on non-communicable diseases, it considered diseases such as cardiovascular disease, diabetes and hypertension. Due to the high prevalence of COVID-19 during the time of survey, it considered that also. WTP of a patient is influenced by the facilities at the hospital, costs of treatment, expected improvement in the current system and the socio-economic characteristics of the patient. The average values of each variable were analysed with the mean and SD, and the Mann-Whitney U test and Kruskal Wallis test were also used to understand the statistical significance of WTP on the socio-economic characteristics of the patients.

## RESULTS

The data consists of patients from rural and urban areas across Kerala. Respondents were asked about their WTP for in-patient consultations, inpatient care, diagnostic services, and preventive healthcare initiatives. Out of the 248 in-patients, 62.9% (156) of patients in the tertiary public healthcare service were willing to pay for the improved conditions, especially the quality of doctors whereas 22.1% were not willing to pay due to their poor economic

background and 15% of patients argued that it is the responsibility of government to provide the healthcare facilities to the people at a free cost. The minimum amount of WTP is rupees 10 and the maximum amount is rupees 1000, with a mean value of rupees 139.62.

Even though the government provides the treatment at free of cost, the patients incurred an average total cost of Rs.10600.60 with Rs.7525.8 as the direct cost and Rs. 2526.83 as the indirect cost. This high cost is due to the lack of sufficient laboratory facilities at the hospital. Since 53.35% of the sample patients belong to the Below Poverty Line (BPL) category, this creates high burden to the patient and family.

Table 1 shows the distribution of average willingness to pay with different socio-economic characteristics of patients. It shows that the socio-economic variables such as age, caste, activity status, and the type of the ration card (economic status) were statistically significant with p values of 0.03\*, 0.021\*, 0.001\* and 0.000\* respectively. It also reveals that patients from urban areas are WTP more for services than patients from rural areas, with an average of Rs 170 because the patients living in urban areas have better economic and living conditions than rural patients. Besides their accessibility to the healthcare services are very high because the hospital is situated in the urban area. The urban poor are willing to pay for it if it can be made accessible with high facilities. On the basis of the gender of the patients, the WTP of female patients is higher (Rs. 158.36) than that of male patients. Based on the age classification, the patients in the age group 24-30 are WTP more than the other patients, with an average amount of Rs 220. Patients with high educational status included in this group. They have their own views regarding public healthcare services. They need a change in the existing system and are willing to pay more for it. The amount of WTP is minimum for the patients with the age group between 45-60, with an average amount of Rs 99.43. The majority of patients, in this group, are casual workers from low-income families.

**Table 1: Average WTP with the socio-economic status**

Variables		Mean (Rs)	SD	Z/Chi-square(df)
Residential area of patient	Rural	119.57(60.25)	168.851	-1.489 (Mann-Whitney U) p, 0.136
	Urban	170.00(39.75)	257.029	
Gender	Male	158.36(48.72)	243.958	-0.133 (Mann-Whitney U) p, 0.89
	Female	121.81(51.28)	169.163	
Age	24-30	220.00(6.42)	197.484	13.614(3) Kruskal Wallis Test p, 0.03*
	30-45	187.59(18.58)	228.276	
	45-60	99.43(33.97)	123.400	
	Above 60	138.59(41.02)	250.633	
Religion	Hindu	124.71(54.48)	192.662	4.819(2) Kruskal Wallis Test p, 0.09
	Muslim	125.61(31.42)	178.231	
	Christian	228.41(14.10)	303.289	
Caste	ST	20(0.64)	-	9.752(3) Kruskal Wallis Test p, 0.021*
	SC	88.95(24.35)	170.548	
	OBC	153.85(55.77)	215.656	
	General	166.50(19.24)	231.141	

Variables	Mean (Rs)	SD	Z/Chi-square(df)
Physically challenged	Yes	168.89(5.77)	312.987
	No	137.82(94.23)	202.459
	SSLC	68.33(3.84)	37.639
Highest education in the family	HSS	101.03(21.79)	178.312
	Graduation	146.48(31.93)	207.323
	Post-graduation	125.63(20.51)	150.450
	Above post-graduation	683.33(1.93)	548.483
	student	300.00(2.56)	467.262
Activity status	Unemployed	91.38(44.23)	111.074
	Regular income earner	300.15(21.79)	320.500
	Casual worker	83.06(31.42)	111.457
	Yellow	75.00(14.74)	97.328
Colour of ration card	Pink	104.33(33.34)	194.087
	Blue	121.23(41.67)	173.408
	White	421.88(10.25)	290.384
	Total	139.62(100)	209.090

Note: Figures in brackets show percentage of total respondents

Source: Primary Survey

In the case of religion, the patients from the Christian community are willing to pay more than the patients from other religions, with an amount of Rs. 228.41. Among the different castes, the patients from the general category were willing to pay more amounts (Rs. 166.50) than the other castes, and it was low for the patients from the ST category, with an amount of Rs 20. The patients from the SC category are willing to pay an average amount of Rs 88.95 to the hospital. The patients in the forward communities have better economic status than the other patients and have the ability to pay more for it, while the patients in the SC category live with a low level of economic background and can't pay more for it. The patients have above post-graduation level of education in their family members were willing to pay (Rs. 683.33) for the public healthcare services than the others, and the SSLC level was willing to pay (Rs. 68.33) less than the others. The activity status of the patients shows that the regular income earners are willing to pay more (Rs. 300.15) because they have permanent income and earnings and can pay more for it, followed by the students (Rs. 300). The casual workers were willing to pay less (Rs. 83.06) because they were suffering from job insecurity. Apart from that, they earn a lower level of income and can only afford a small amount to pay for it. The patients with a white colour ration card were willing to pay more (Rs. 421.88) than the others, and it was less (Rs. 75) in the case of patients with a yellow colour ration card. The colour of the ration card indicates the economic background of the patients. Patients with a white card are included in the APL category and have the capacity to pay for it. Patients with a yellow card are included in the BPL category and do not have the financial soundness to pay more for tertiary public health care services.

The sample patients were willing to pay because of the expectations in improvement of infrastructural facilities, overall cleanness and hygienic conditions, availability of sufficient spaces inside the inpatient wards, behaviour of staff in the hospital, availability of the services such as laboratory, medical store, canteen and the reduction in the time period of registration and consultation. Because of the availability of all these facilities in the private health care services in Kerala, the patients visit there and left bankrupt due to the burden of treatment.

Generally, the preference for tertiary healthcare depends upon the type and severity of diseases through a referral system. It is noted that patients with hypertension and cardiovascular disease have the highest average or almost the same willingness to pay for tertiary healthcare services in the state, with Rs. 152.6 and Rs. 152.35, respectively (Table 2).

**Table 2: Average willingness to pay and the type of disease**

Name of disease	Mean (Rs)	N	SD
Hyper tension	152.62	21	235.439
Cardio Vascular Disease	152.35	50	224.938
COVID-19	114.53	43	182.005
Diabetic	144.88	42	209.908
Total	139.62	156	209.090

Source: Primary Survey.

## DISCUSSION

There is an association between the socio-economic characteristics of patients such as caste and the highest education of the family and the WTP of the patients. Based on the principles of WTP, lower-income people may be less interested in pay compared to higher-income people. However, the results regarding the determinants of WTP of patients showed that the BPL categories (Yellow and Pink colour ration card holders) are also willing to pay for the treatment. This is because tertiary public healthcare institutions provide highly specialised care to the patients free of cost, it is very helpful to the patients who were suffering economically due to the diseases. If they choose a private health care institution, they will have to pay a huge amount as treatment costs. Besides, depending on private institutions for laboratory facilities also creates an additional burden. Hence, if the public sector provides all the facilities and then charges an amount as a user fee can be justified. Additionally, APL category, Blue and White colour card holders, are also utilizing the public health care services and they are willing to pay a higher amount compared to the BPL category.

The findings underscore the need for a differentiated approach to user fee structures. Services with higher perceived value, such as inpatient care and diagnostic services, APL category, could bear higher fees while ensuring affordability for low-income households through subsidies or exemptions. Urban-rural disparities necessitate targeted interventions to prevent exacerbating existing inequalities. Implementing WTP-based user fees could also incentivise improvements in service quality, as patients are likely to demand better care when paying directly. However, care must be taken to prevent financial hardship for vulnerable populations.

## CONCLUSION

In conclusion, the study highlights the viability of user fees with the support of willingness to pay (WTP) for tertiary public healthcare services in Kerala. The tertiary public healthcare providers in the state give highly advanced care through the referral system along with the private healthcare service providers. Even though there has been a significant increase in the number of private healthcare institutions in the state, the number of patients visiting the public healthcare institutions remains high due to the low cost of treatment. But patients incur treatment costs either as direct or indirect costs. Based on the review of literature, in India, user fees in the public healthcare sector are designed to improve service quality and generate revenue but often act as barriers to access for the poor. The effectiveness of user fees is hindered by poor management, lack of awareness about exemptions, and inconsistent implementation across states. In the case of Kerala, the findings underscore the

pressing need to address the high prevalence of non-communicable diseases in the state and the significant out-of-pocket expenditures of households. Differentiated fee structures, based on the socio-economic profiles of patients, and targeted subsidies or exemptions for vulnerable groups can help mitigate financial barriers. Moreover, enhancing infrastructural facilities, ensuring hygienic conditions, and improving service delivery in public healthcare institutions are critical to meeting patient expectations and reducing dependency on expensive private healthcare providers especially laboratories. By adopting a balanced and equitable approach to user fee implementation, Kerala can ensure that its public healthcare system remains accessible, sustainable, and capable of addressing the evolving health needs of its population.

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