



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 10, October 2026)

A Study on the Impact of Catastrophic Health Spending on Family Welfare in Trivandrum, Kerala

Dr. Shirly O.Y

*Assistant Professor, Department of Economics, Christian College, Kattakada, Trivandrum Dist., Kerala, Pin: 695572.
(Affiliated to University of Kerala), India*

Abstract—Health is a state of complete physical, mental and social well-being, and not merely the absence of disease. It is also a fundamental component of human well-being and a crucial determinant of socio-economic development. Mental health includes the capacity to think and behave in ways that support one's ability to achieve well-being, cope with distress, and respect personal and social boundaries. However, due to illness, accidents, and some chronic diseases, families are often forced to bear high medical expenses. In many countries, especially developing nations like India, a large portion of medical expenses is paid directly by households. This direct payment is known as out-of-pocket expenditure. When a large part of a family's income is spent on medical treatment, it can cause debt and create financial problems for the family. "The high OOOPE's often result in catastrophic health expenditure (CHE) either pushing the individuals and households into poverty or preventing them from accessing health care". In many cases, families are forced to borrow money from relatives, friends, or financial institutions to meet hospital expenses. High interest rates on loans can further increase their financial burden, making it difficult to repay the debt. This affects middle-class families the most. As a result, the daily expenses of the family will be reduced. Families may also sell their valuable assets like gold, land, jewellery, etc, to cover their medical costs.

Keywords—Catastrophic Health, Spending, Community Health Centre, Expenditure, Out-of-Pocket (OOP), Household, Financial Hardship AYUSHMAN BHARAT.

I. INTRODUCTION

The households are forced to spend a large portion of their income on healthcare, they may have to forego other essential expenses, such as food, housing or education. When these healthcare expenses become excessively high in relation to a family's income, they are referred to as catastrophic health spending. Households experienced CHS in private health facilities were higher in almost all the states (except Delhi) compared to the households experienced CHS in public health facilities. Almost all the households experienced CHS while taking treatment in private health facilities in the states of Arunachal Pradesh (100%) Goa (91%) and Lakshadweep (91%).

Among the states, significant number of households (75%) in Goa have experienced CHS, while more than half of the households in Andhra Pradesh (53) have experienced CHS in both the health facilities (Public and Private).

About 29% of households in India experienced CHS while seeking treatment for the children less than 5 years of age due to high pocket payments. It is very clear from the study that many households are becoming poor and many more are being trapped into poverty due to health care payments for the treatment of children in the age group of 0-4 years.

Catastrophic Health Spending: Catastrophic Health Spending (expenditure) refers to the financial burden imposed on individuals or households when Out-of-Pocket health care expenses exceed a certain threshold of their income or expenditure, often leading to financial hardship or impoverishment.

When households are forced to spend a large portion of their income on healthcare, they may have to forego other essential expenses, such as food, housing or education. This can lead to decline in their overall well-being and quality of life. The prevalence and distribution of catastrophic health spending vary significantly across different countries and populations. Studies have shown that low-income households and marginalized communities are disproportionately affected by catastrophic health expenditures.

The expenditure of catastrophic can be measured by the incidence of financial hardship caused by health payments – i.e.) the number of households with health spending that is large relative of their ability to pay. There is no right or wrong way to measures ability to pay.

Out-Of-Pocket Payments: Direct cash payments at the point of service dominate healthcare financing in many developing and middle-income regions, instantly straining family budgets.

Major Causes of Catastrophic Spending: Catastrophic health spending occurs when Out-Of-Pocket medical costs exceed a household's capacity to pay, forcing families to sacrifice basic needs like food or dip in to essential savings.



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 10, October 2026)

The major causes include: Out-Of-Pocket payments, Lack of health Insurance, Chronic and Non-Communicable Diseases (NCDs), Medical inflation and high pricing, Hospitalization and Emergency Care, Vulnerable Demographics, Private Facility Reliance and Indirect Productivity Losses.

Factors Associated with Catastrophic health Spending: The analysis of determinants of CHS indicates that a stable livelihood acts as a wall against CHS and seeking care from public hospitals still proves catastrophic for households. Improving and expanding the current health insurance coverage through **AYUSHMAN BHARAT** moving toward universal health insurance coverage are the most effective ways of shielding the population from the impoverishing effects of CHS.

It is also suggested to provide free treatment to the vulnerable segment of the population for the treatment of heart diseases, which was already done for treatment of tuberculosis in India. The coverage and the insurance amount of the RSB are very low and needed to be enlarged. The expansion of the NPCDCS to all the districts may be helpful in preventing many households from falling into the medical poverty trap. In order to increase access to health care and reduce the burden of household health spending and CHS in India, the National Health Policy (NHP) 2018 aimed to increase public health spending to 2.5% of GDP by 2030. If this implements, it may yield better results in reducing CHS in India.

Catastrophic Based on India: In India, the health system is a mix of private and public healthcare facilities. The majority of the population (about 85%) prefers private facilities because they provide better quality of care. Public health centres provide low-cost health care services, and they are mostly used by poor people and low-income individuals. As their income is limited, they try to spend only what they can afford on basic healthcare expenses." People prefer government-owned public hospitals and health care centres for treatment. India has started many healthcare centres for treatment. India has started many government health insurance programs to reduce the financial burden on people. One of them is Ayushman Bharat, which helps poor and economically weak families by providing financial support for medical treatment.

Major Health Schemes in India: Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), Rashtriya Swasthya Bima Yojana (RSBY), Employee's State Insurance Scheme (ESIS), Central Government Health Scheme (CGHS), State Government Scheme.

Catastrophic Based on Kerala: Kerala, is well known for its high literacy rate, good health conditions, and better healthcare system compared to many other states in India. However, even with these achievements, catastrophic health spending is still a problem in Kerala. Many people in Kerala have long-term diseases like diabetes, heart problems, cancer, etc. These diseases need regular treatment and medicines, which cost a lot of money. Kerala also has many old people who need medical care often. Because of this, families have to spend more money on health care. It was one of the reasons for catastrophic health spending in Kerala.

'Impact of Catastrophic Health Spending on Family Welfare: The impacts of health spending can seriously affect family welfare, when the medical expenses are too high according to their monthly income. It reduces family income and savings. This affect their future income and social status of the family. It also affects their children's education system, like children may be forced to stop studies, which affects their future education opportunities.

In addition, families may cut spending on the basic needs, like, food, nutrition, clothes etc., this makes their life worse. It also lowers the family's standard of living. Financial pressure also creates mental stress, anxiety, and tension among family members. In some cases, it can lead to family conflicts. In many cases, the main earning member of the family becomes sick, the family income decreases. Because of illness, they may not be able to work properly. This weakens the financial condition of the family and can push them further into poverty. When the cost of medicine rises, money that is saved for future needs has to be used for medical treatment.

For example, the COVID- 19 pandemic disturbed health systems in 2020, but it is not clear how it affected the money problems caused by out-of-pocket health-care costs. {Health expenditure during the covid-19 crisis increased multifold⁴. Families had to spend more money on hospital treatment, medicines, COVID tests, quarantine, and other care. At the same time, lockdowns reduced people's income, especially daily wage workers, small business owners, and migrant workers.

Family welfare in this region: Family welfare in Trivandrum is managed through a multi-layered support system that combines health services, nutritional support for children, and socio-economic empowerment for women. When analysing family welfare, the "Intergenerational Transfer of Risk" is a key factor.

Because the family structure is shifting toward nuclear units, the financial burden of a single sick member (especially an elderly parent) is no longer distributed across a large kinship group, making the family more vulnerable to catastrophic health expenditures. Families manage health expenditures through a combination of state-sponsored safety nets, community-level financial pooling, and local support systems.

II. STATEMENT OF THE PROBLEM

Health care expenses are increasing in areas, and families often have to spend a large part of their income on medical treatment. When medical expenses become very high, it can lead to catastrophic spending, which creates serious financial problems for households. Many families are forced to use their savings, borrow money, or even sell their assets to pay for treatment.

III. OBJECTIVES

1. To identify the reasons for high healthcare expenses among families.
2. To study how catastrophic health spending affects family welfare.
3. To know how families manage medical expenses during illness.
4. To analyse the role of health insurance in reducing medical expenses.
5. To know the repayment status on medical loans.

IV. METHODOLOGY OF THE STUDY

The study was conducted on the basis of data collected from primary as well as secondary sources. The secondary data were collected from sources such as research articles, journals, government reports, books, and online sources related to catastrophic health spending and family welfare. Information from organizations like the World Health Organization and the World Bank was also used. The collected data were reviewed and analysed to understand how high medical expenses affect a family's income, savings, and overall welfare. The study focuses on the causes, effects, and financial burden of catastrophic health spending on families.

V. DATA ANALYSIS

This chapter presents the analysis and interpretation of data collected from 50 respondents.

The data is organized using simple statistical tools such as frequency and percentage and is presented in tables and figures for easy understanding. It also helps in understanding the financial burden of healthcare on households and its impact on their economic condition and overall well-being. Let us see details with the help of the below table.

TABLE 1
TABLE SHOWING THE GENDER SIZE OF THE RESPONDENTS

No.	Gender	No. of Respondents	Percentage (%)
1	Male	28	52
2	Female	24	48
3	Others	0	0
	Total	50	100

Source: Primary Data.

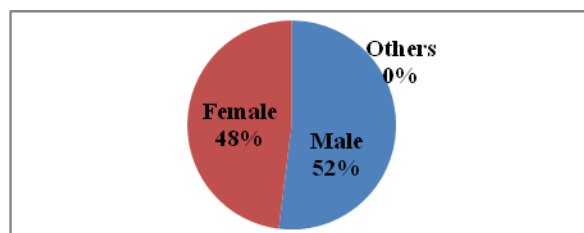


Figure 1. Figure showing the Gender Size of the Respondents

Interpretation: Table 1 and Figure 1 shows the Gender of Respondents, who participated in this survey. Out of 50 Respondents, Majority Respondents are Male; it represents 52% of total, while there are only 48% Female Respondents participated in this survey.

TABLE 2
TABLE SHOWING THE AGE WISE DISTRIBUTION OF THE RESPONDENTS

No.	Age	No. of Respondents	Percentage (%)
1	18 – 25	18	36
2	26 – 35	12	24
3	36 – 45	8	16
4	46 - 60	7	14
5	Above 60	5	10
	Total	50	100

Source: Primary Data.

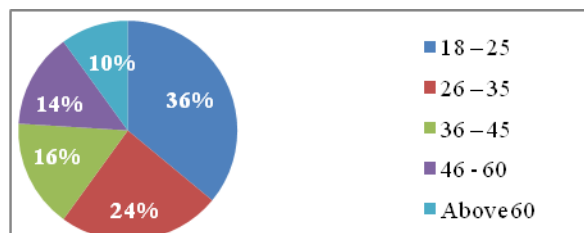


Figure 2. Figure showing the Age-wise Distribution of the Respondents

Interpretation: Table 2 and Figure 2 shows that the majority of the respondents were in the age group of 18-25 representing 36% and it was followed by the age group of 26-35 were 24%, group of 36-45 were 16%, 46-60 were 14% and the age above 60 were representing 10%.

TABLE 3
TABLE SHOWING THE HOUSEHOLD SIZE

No.	No. of Members	No. of Families	Percentage (%)
1	1 – 2	1	2
2	2	3	6
3	3 – 4	35	70
4	Above 5	11	22
	Total	50	100

Source: Primary Data.

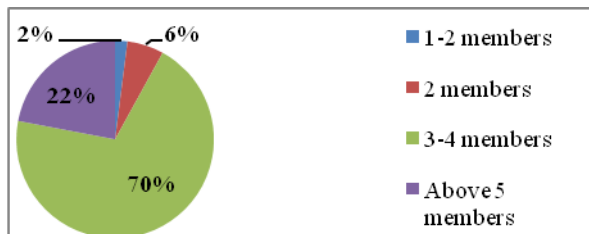


Figure 3. Household Size Distribution of the Respondents

Interpretation: Table 3 shows the household size distribution, Majority of the respondents were included in the group of family 3-4 members representing 70%, and then followed by the members of above 5 were 22%, 2 members were 6% and 1-2 members were 2%.

TABLE 4
TABLE SHOWING THE HEALTHCARE ACCESS

No.	Healthcare Facility	No. of Families	Percentage (%)
1	Government Hospital/ PHC	22	44
2	Private Hospital	22	44
3	Co-operative Hospital	5	10
4	Other	1	2
	Total	50	100

Source: Primary Data.

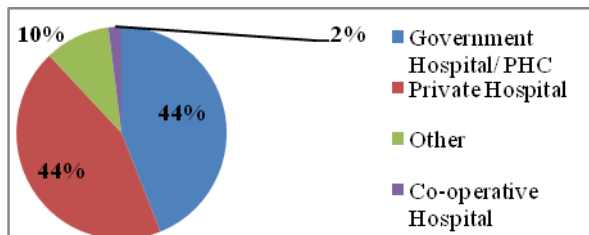


Figure 4. Figure showing the Healthcare Access

Interpretation: From Table 4 and Figure 4, we can understand that most of the families seek government and private hospitals for their medical treatment. Most striking finding is the identical preference of government and private sector were both representing 44%. While co-operative represents 10%, minimal role of T traditional care was 2%.

TABLE 5
TABLE SHOWING THE OPINION ON FACILITY OF GOVERNMENT HOSPITAL

No.	Opinion on Facilities	No. of Families	Percentage (%)
1	Good but overcrowded	17	34
2	Poor quality of service	13	26
3	Lacks basic medicine/ staff	13	27
4	Excellent and sufficient	7	16
	Total	50	100

Source: Primary Data.

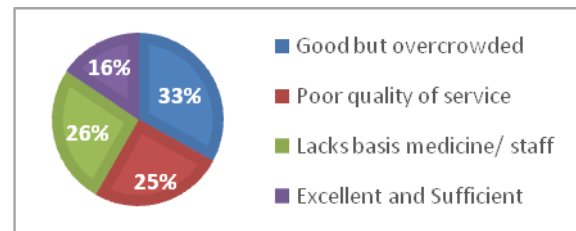


Figure 5. Figure showing the Opinion on Facility of Government Hospital

Interpretation: Table 5 and Figure 5 show people's opinions on government hospital facilities. The responses are mixed, with some people satisfied and others expressing dissatisfaction. While many consider the facilities adequate and affordable, others point out issues such as poor-quality service and lack of medicines or staff.

TABLE 6
TABLE SHOWING THE INCOME OF THE HOUSEHOLD

No.	Income Groups	No. of Families	Percentage (%)
1	Below `10000	11	22%
2	`10000 - `25000	12	24%
3	`25000 - `50000	9	18%
4	Above `50000	18	36%
	Total	50	100

Source: Primary Data.

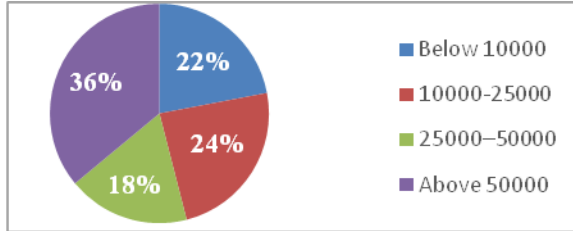


Figure 6. Figure showing the Income of the Household

Interpretation: Table 6 and Figure 6, represents the monthly income distribution 50 households, we can understand that 46% of households earns less than ₹25000 per month, while 36% of the family fall into highest income above ₹50000 per month and 18% of families earns between 25000 to 50000 per month.

TABLE 7

TABLE SHOWING THE SOURCE OF INCOME OF THE HOUSEHOLD

No.	Source of Income	No. of Families	Percentage (%)
1	Agriculture/ Farming	2	4
2	Govt. / Private Sector Job	13	26
3	Daily wage labour	24	48
4	Small Business/ Trade	11	22
	Total	50	100

Source: Primary Data.

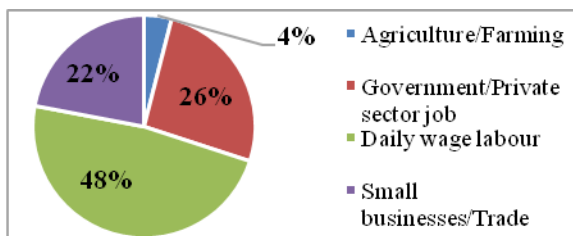


Figure 7. Figure showing the Source of Income of the Household

Interpretation: Table 7 and Figure 7 shows the Majority of the families depend on informal and less secure sources of income. Most of the families depend on daily wage labour representing 48%, 26% have salaried jobs, while 22% of the families run small businesses and trade, only 4% on agriculture.

TABLE 8

TABLE SHOWING THE HEALTH INSURANCE

No.	Health Insurance	No. of Families	Percentage (%)
1	Government	11	22
2	Private	8	16
3	Does Not Have	32	62
	Total	50	100

Source: Primary Data.

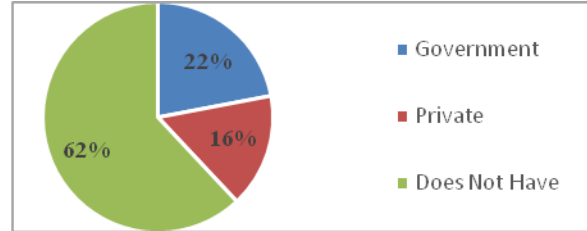


Figure 8. Figure showing the Health Insurance

Interpretation: From the Table 8 and Figure 8, we can see that 62% of the respondents have no insurance, 22% covered by government schemes like Karunya, PMJAY, then 16% have private insurance. This shows that more than half participants did not have financial protection for medical spending.

TABLE 9

TABLE SHOWING THE FINANCING MEDICAL EXPENSES

No.	Payment Method	No. of Families	Percentage (%)
1	Regular / Monthly Income	18	36
2	Past Savings	13	26
3	Borrowed Money/ Loans	12	24
4	Sold Assets (Gold/Land)	7	14
	Total	50	100

Source: Primary Data.

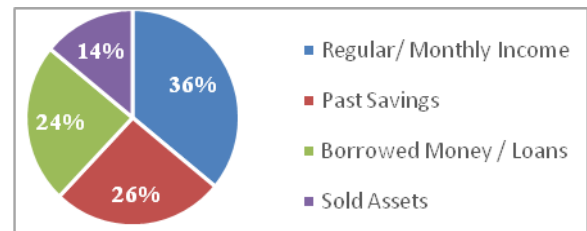


Figure 9. Figure showing the Financing Medical Expenses

Interpretation: From the Table 9 and Figure 9, we can understand that most common way that people used to pay the medical expenses with using their Regular Monthly income but a significant number depend on saving or borrowing. A smaller yet even important group even sell their assets to meet medical expenses. It shows that medical expenses are a major financial burden.

TABLE 10

TABLE SHOWING THE BORROWING OF HEALTHCARE EXPENSES

No.	Frequency of Borrowing	No. of Families	Percentage (%)
1	Occasionally	20	40
2	Never	16	32
3	Regularly	7	14
4	Always Depends	7	14
	Total	50	100

Source: Primary Data.

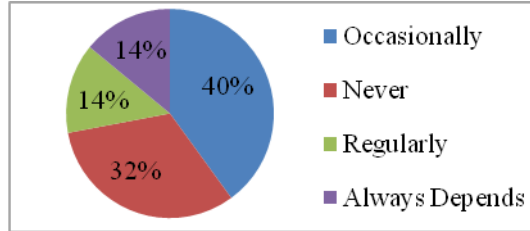


Figure 10. Figure showing the Borrowing of Healthcare Expenses

Interpretation: From the Table 10 and Figure 10, we can understand that while many families borrow money for healthcare occasionally, a significant proportion do not rely on borrowing. Some of them always depend and others depend regularly.

TABLE 11
TABLE SHOWING REASONS FOR HIGH MEDICAL SPENDING

No.	Reason for Spending	No. of Families	Percentage (%)
1	Acute (Fever/Infection/Viral)	30	60
2	Injury/Accident/Surgery	9	18
3	Pregnancy/Maternity Related	6	12
4	Chronic (Diabetic/Heart/BP)	5	10
	Total	50	100

Source: Primary Data.

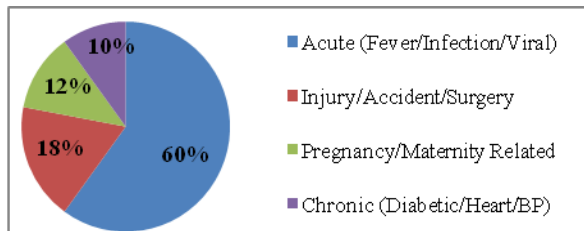


Figure 11. Figure showing the Reasons for High Medical Spending

Interpretation: From the table 11 and Figure 11, it is inferred that, the most common reason for the high medical spending is Acute (fever, infection, viral) representing 60%. This followed by 18% for Injury/Accident/Surgery, 12% for pregnancy-related and 10% for Chronic (Diabetes/Heart/BP).

TABLE 12
TABLE SHOWING THE FINANCIAL SHOCKS ON MEDICAL EXPENSES

No.	Frequency of Shock	No. of Families	Percentage (%)
1	Sometimes	21	42
2	Rarely	18	36
3	Never	8	16
4	Frequently	3	6
	Total	50	100

Source: Primary Data.

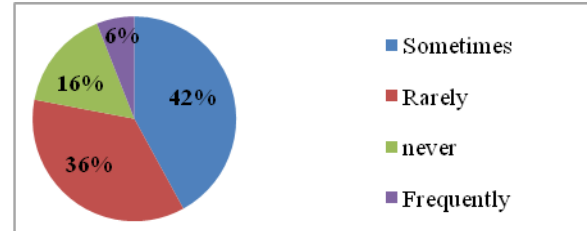


Figure 12. Figure showing the Financial Shocks on Medical Expenses

Interpretation: From the Table 12 and Figure 12, the data indicates that a significant majority of families have faced some level of financial instability due to health-related costs. Most families combining "sometimes and rarely" have dealt with financial instability due to health-related shocks.

TABLE 13
TABLE SHOWING THE REPAYMENT STATUS OF MEDICAL LOANS

No.	Loan Status	No. of Families	Percentage (%)
1	Partially Paid	20	40
2	Fully Repaid	18	36
3	Unable to start repayment	8	16
4	Interest is still accumulating	4	8
	Total	50	100

Source: Primary Data.

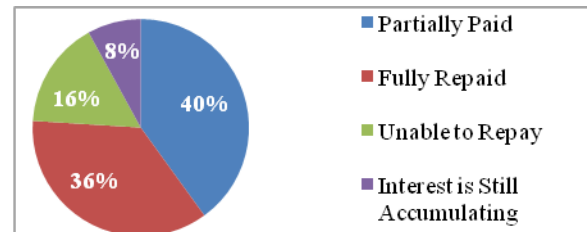


Figure 13. Figure showing the Repayment Status of Medical Loans

Interpretation: From the Table 13 and Figure 13, it is inferred that most people have fully repaid the money borrowed for treatment, while some are still repaying loans or have not yet started repayment, with interest continuing to accumulate in certain cases. This suggests that borrowing is a common method of managing medical expenses, highlighting the financial burden of health care costs.

Statistical Trend Analysis – Repayment Status of Medical Loans

1. Percentage Analysis

The Percentage of families under each repayment category is calculated using:

$$\text{Percentage} = \frac{\text{Number of Families}}{\text{Total Number of Families}} \times 100$$

Here, Total Families = 50.

Loan Status	Families	Calculation	Percentage
Partially Paid	20	$\frac{20}{50} \times 100$	40%
Fully Repaid	18	$\frac{18}{50} \times 100$	36%
Unable to start Repayment	8	$\frac{8}{50} \times 100$	16%
Interest Still Accumulating	4	$\frac{4}{50} \times 100$	8%
Total	50		100%

2. Statistical Trend

The Repayment Pattern can be ranked as:

$$40\% > 36\% > 16\% > 8\%$$

Therefore:

- Partially paid loans are the largest category at 40%.
- Fully repaid loans account for 36%.
- 16% of families have not yet been able to begin repayment.
- 8% are experiencing continuing interest accumulation.

A Particularly important combined Indicator is:

$$\text{Outstanding Loan Burden} = 40\% + 16\% + 8\% = 64\%$$

Thus, 64% of the surveyed families still have some form of outstanding medical loan burden, while only 36% have completely repaid their loans.

3. Ratio Analysis

The ratio of families with outstanding loans to fully repaid loan is:

$$\frac{32}{18} = 1.78 : 1$$

So, approximately 1.78 families have outstanding medical loans for every 1 family that has fully repaid its loan.

4. Economic Trend Analysis

The data indicates that medical loans are creating a Persistent financial burden on households. Although 36% of families have successfully repaid their loans, the majority(64%) continue to experience some level of debt.

The 40% partial repayment rate Is particularly significant. It suggests that many families are able to make repayments but may not have sufficient disposable income to clear their medical debt quickly.

This may indicate reduced household savings, lower financial flexibility, or competing expenditure requirements.

The 16% unable to start repayment group represents families facing a more severe economic situation. Their inability to begin repayment suggests that their income may be insufficient even to meet the initial loan obligations.

The 8% of families experiencing continued interest accumulation face an additional economic risk because their outstanding debt can increase over time. If repayment is delayed, the accumulated interest can further reduce household disposable income and potentially lead to a debt cycle.

VI. FINDINGS

1. Nearly equal participation between males and females, while most of the participants were younger, with fewer elderly people.
2. Most families are medium-sized and nuclear in structure.
3. Nearly 46% of households earn less than ₹25,000 per month, which shows that many families belong to low-income groups.
4. Daily wage labour is the primary source of income for most.
5. People prefer both government and private hospitals equally for their healthcare services.
6. A significant number of respondents do not have any health insurance coverage.
7. Acute illnesses are the main cause of high medical expenditure among households.
8. Medical expenses mainly affect household savings and leisure spending.
9. Many families experience occasional financial instability due to health-related costs.
10. Borrowing money for healthcare is common, with some households still repaying loans.
11. Most patients recover well or remain stable after treatment.
12. Out-of-pocket expenditure remains the primary mode of healthcare financing.
13. Opinions about government hospitals are mixed, with both positive and negative feedback.
14. Some people are satisfied with government healthcare services, while others are dissatisfied with them.

VII. CONCLUSION

The purpose of this study is to analyse how catastrophic health spending impacts family welfare.



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 10, October 2026)

It examines how high medical costs for chronic illnesses and a reliance on private healthcare drive households into financial distress. The research aims to identify the reasons for these expenses and evaluate how families manage them to suggest ways to reduce their financial burden and healthcare costs. Companies expand insurance coverage to include all low-income and daily wage households, also ensure low interest loans to reduce medical debt. It Increase public awareness about existing government health schemes and benefits, and enable better equipment and staff for government hospitals. Reduce out-of-pocket healthcare expenses and promote stable employment opportunities. Catastrophic health spending encourage preventive healthcare and early treatment.

REFERENCES

- [1] <https://pmc.ncbi.nlm.nih.gov/articles/PMC3516025/>
- [2] <https://www.studocu.com/in>
- [3] <https://www.slideshare.net>
- [4] Nayak, P. (2014). "Health Economics in India". 1st Edition. New Delhi: Oxford University Press.
- [5] Rao, K. S. (2017). Do We Care? "India's Health System". 1st Edition. New Delhi: Oxford University Press.
- [6] Wagstaff Adam van Doorslaer Eddy (2003). "Catastrophic Expenditure and Poverty Related to Health Care", Research Publication World Bank / Oxford University Press.