# Comparative Analysis of Women's Health Expenditure in Urban and Rural Areas: A Study of Visakhapatnam District, Andhra Pradesh

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# Abstract:

This study examines the gender disparities and financial barriers in healthcare access among rural populations in Andhra Pradesh, India, with a focus on the socio-cultural and economic challenges faced by women. Despite the recent female advantage in life expectancy at birth, gender inequalities persist in health decision-making, with women often facing limited autonomy and socio-cultural restrictions. Analyzing health expenditure in categories such as antenatal care, birth delivery, family planning, and pregnancy-related complications, we find significant cost disparities between government and private services, with private care being notably more expensive. Rural and low-income populations bear an outsized financial burden, Moreover, women in these regions experience a "triple burden" of healthcare costs, encompassing non-communicable diseases, communicable diseases, and reproductive health expenses. This analysis underscores the pressing need for targeted interventions to address these gendered financial disparities in healthcare access and affordability.

**Key words:** Health expenditure, Gender disparities, health financing indicators, Income levels. Out of pocket expenditure

# **1. Introduction**:

Health expenditure plays a vital role in shaping a population's overall well-being and highlights the priorities and effectiveness of healthcare systems. Focusing on women's health spending is especially important among vulnerable groups, as it significantly impacts maternal health, child welfare, and the socio-economic progress of families and communities. In this context, Andhra Pradesh, a state in southern India, offers a distinct setting to analyze women's health expenditure, given its diverse demographics, shifting public health strategies, and socio-economic challenges.

Health-related decision-making among rural populations remains poorly understood due to limited research in this area. Existing studies have explored factors influencing health behavior in rural communities, such as the perceived severity of illness, local knowledge and classification of diseases, trust in home remedies and traditional medicine, and the costs associated with accessing Western medical care (Young, 1980; Stock, 1983). This paper adds to the discussion by examining health-care expenditure within the framework of domestic budgets, emphasizing its importance for policymakers in allocating resources efficiently and enhancing public health outcomes.

Gender disparities in health and mortality in India have been extensively documented over recent decades. Unlike many parts of the world, the female advantage in life expectancy at birth (LEB) in India is a relatively recent development (Canudas-Romo V, et al., 2015). However, this overall advantage conceals age-specific disadvantages, as Indian women continue to face feticide and higher mortality rates (Sudha SS, Rajan SI, 1999). A key distinction in the disease burden between men and women is the additional reproductive health challenges women face, including pregnancy and childbirth. Consequently, women bear out-of-pocket (OOP) healthcare costs not only for communicable and non-communicable diseases but also for reproductive health issues, unlike men. This triple disease burden places women at a greater disadvantage in achieving health equity. Recognizing and addressing this burden, along with assessing women's healthcare costs, is essential for advancing health for all.

Extensive research has been conducted on gender discrimination in healthcare utilization in India, consistently revealing unequal access for men and women throughout the life cycle. Studies show that girls receive fewer immunizations than boys (Kurz KM, Johnson-Welch C, 1997), have less access to hospital care, and experience fewer hospitalizations before death (Asfaw A, Klasen S). Additionally, untreated morbidity rates are higher among women, and significant gender and class disparities exist in access to in-patient care (Sen G, Iyer A).

In Andhra Pradesh, gender disparities in healthcare access and financial burdens remain pressing issues. Women face unique challenges, including socio-cultural restrictions, limited autonomy in health decisions, and economic barriers. These factors affect both their access to healthcare services and how household resources are allocated for health needs. Analyzing women's health expenditure in the state sheds light on patterns of healthcare use, the impact of government programs, and the role of private healthcare providers.

This study examines trends, determinants, and outcomes of women's health expenditure in Andhra Pradesh, focusing on areas such as maternal care, chronic disease management, and preventive services. By exploring healthcare spending at both household and systemic levels, the research aims to identify policy gaps and propose actionable solutions to promote equitable and sustainable healthcare for women.

Antenatal care and birth delivery are critical components of maternal health services. The costs associated with these services vary significantly depending on geographical location (urban vs. rural) and the type of healthcare provider (government vs. private). Understanding these variations is essential for policymakers and healthcare providers to design equitable healthcare interventions. Expenditures associated with family planning and managing pregnancy-related complications are essential aspects of maternal health that directly impact household finances and healthcare access.

# 2. Objectives

1. To analyze the differences in healthcare spending for women between urban and rural areas of Visakhapatnam district, with a focus on antenatal care, delivery, family planning, and pregnancy-related complications.

2. To evaluate cost disparities between government and private healthcare facilities and their impact on women's healthcare choices and affordability.

## 2.1. Methodology

The study used both secondary and primary data, the secondary data collected from the health accounts of Union health Ministry. Data collected from a field study in Visakhapatnam, Andhra Pradesh and analyses the costs incurred for family planning services and pregnancy-related complications in both urban and rural areas, focusing on differences between government and private healthcare providers. A total of 250 respondents were selected, 125 from urban and 125 from rural areas. For the collected data, descriptive statistics and chi-square analysis were performed using Microsoft Excel.

# 3. Results and discussions

In this section, state and union government allocations to the health expenditure and out-ofpocket expenditure by the people has been analyzed. As well as women related health expenditures of the respondents in the study area such as, antenatal care, Birth delivery, family planning and Pregnancy related Complications has presented.

# 3.1 Health Financing Indicators for Andhra Pradesh:

The key health financing indicators for Andhra Pradesh are provided in Table.1. To ascertain a state's performance comparative indicator at the national level is also given in the same table.

Table 1	
Key Health Financing Indicators for Andhra Pradesh: SHA	A estimates 2019-20

	Andhra	
Indicators	Pradesh	India
Total Health Expenditure (THE) as percent of GSDP/GDP	2.8	3.3*
Total Health Expenditure (THE) Per capita (Rs.)	5114	4863
Government Health Expenditure (GHE) percent of THE	33.2	41.4
Government Health Expenditure (GHE) percent of		
GSDP/GDP	0.9	1.4*
Government expenditure per capita	1699	2014
Per Capita OOPE	3254	2289
Out of Pocket Expenditures (OOPE) as percent of THE	63.6	47.1
Social Security Expenditure on health as percent of THE	9.9	9.3
Private Health Insurance Expenditures as percent of THE	1	7.0

Source: State Health Accounts Estimates For Andhra Pradesh 2019-20

The comparative analysis of health expenditure indicators between Andhra Pradesh and the national average for India highlights key differences in the structure and allocation of healthcare resources. One of the critical indicators is the Total Health Expenditure (THE) as a percentage of Gross State Domestic Product (GSDP) and Gross Domestic Product (GDP). Andhra Pradesh reports a THE of 2.8% of GSDP, which is lower than the national average of 3.3%. This suggests that Andhra Pradesh's health spending relative to its economic output is below the national standard, indicating potential underinvestment in the healthcare sector.

In terms of per capita health expenditure, Andhra Pradesh shows a higher THE of ₹5,114 compared to ₹4,863 at the national level. This reflects relatively higher health spending per individual in the state, despite a lower proportion of GSDP dedicated to health. However, when examining Government Health Expenditure (GHE) as a percentage of THE, Andhra Pradesh lags behind with 33.2% compared to the national average of 41.4%. This indicates a greater reliance on private spending in the state, which can exacerbate financial vulnerabilities for households.

The GHE as a percentage of GSDP/GDP further underscores this disparity, with Andhra Pradesh allocating only 0.9% compared to the national average of 1.4%. This is reflected in the government health expenditure per capita, where Andhra Pradesh reports ₹1,699 compared to ₹2,014 nationally. The lower public spending in Andhra Pradesh highlights a critical gap in public health financing, which may affect access to affordable healthcare services, especially for vulnerable populations.

A striking observation is the Out-of-Pocket Expenditure (OOPE). Andhra Pradesh's per capita OOPE stands at ₹3,254, significantly higher than the national average of ₹2,289. This translates to OOPE constituting 63.6% of THE in the state, compared to 47.1% nationally. The high OOPE burden in Andhra Pradesh signals considerable financial strain on households, likely due to limited public health services and insurance coverage. This high reliance on OOPE can lead to catastrophic health expenditure, pushing families into poverty and deterring them from seeking timely medical care.

Social security expenditures on health, as a percentage of THE, are relatively similar between Andhra Pradesh (9.9%) and the national level (9.3%). However, the private health insurance expenditure in Andhra Pradesh is notably lower, accounting for only 1% of THE compared to 7% nationally. This reflects a limited penetration of private health insurance in the state, which contributes to the higher OOPE burden.

#### **3.2 Current Health Expenditure in India:**

The table presents a detailed analysis of health expenditure trends in India from 2017-18 to 2021-22, focusing on key components such as per capita health expenditure, government contributions, out-of-pocket expenses, and other financial sources in the healthcare sector.

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Indicator	2017-18	2018-19	2019-20	2020-21	2021-22		
Current Health Expenditure (CHE) per capita (Rs.) at current prices	3805	4049	4402	4878	5765		
Government Health Expenditure (GHE) as percent of CHE	33.2	34.5	35.3	36.7	41.1		
Out of Pocket Expenditures (OOPE) as percent of CHE	55.1	53.2	52	49.5	45.1		
Social Security Expenditure on Health as percent of CHE	10.1	10.3	10.1	9.4	9.7		
Private Health Insurance Expenditures as percent of CHE	6.6	7.3	7.7	8.1	8.5		
Household Health Expenditure (incl. insurance contributions) as percent of	61.4	60.1	59.2	57.1	50.6		
External/ Donor Funding for health as percent of CHE	0.6	0.5	0.6	0.7	1		

 Table 2.

 Key health financing indicators for India based on Current Health Expenditure of NHA estimates

Source: National Health Accounts Cell, Ministry of Health & Family Welfare

Current Health Expenditure (CHE) per capita has shown a significant and steady increase over the five-year period, rising from ₹3,805 in 2017-18 to ₹5,765 in 2021-22. This growth reflects an upward trend in healthcare spending, which could be attributed to rising healthcare costs, increased demand for health services, and inflationary pressures. The most notable surge occurred between 2020-21 and 2021-22, indicating potential impacts of the COVID-19 pandemic on healthcare spending.

Government Health Expenditure (GHE) as a percentage of CHE has also witnessed a consistent rise, from 33.2% in 2017-18 to 41.1% in 2021-22. This increase signals a greater commitment from the government toward healthcare financing and public health investment. The trend suggests that the government has been progressively increasing its share of health expenditure, potentially aiming to reduce the financial burden on households and achieve better health outcomes. Conversely, Out-of-Pocket Expenditure (OOPE) as a percentage of CHE has declined steadily, from 55.1% in 2017-18 to 45.1% in 2021-22. This downward trend is significant, as high OOPE often leads to financial hardship and limits access to essential healthcare services.

The reduction indicates progress in financial protection, possibly driven by expanded public health programs, insurance coverage, and government interventions aimed at reducing OOPE. Social Security Expenditure on Health as a percentage of CHE has remained relatively stable, fluctuating between 9.4% and 10.3% over the observed period. This consistency highlights the ongoing role of social security mechanisms in supporting healthcare financing. However, the marginal decline in recent years points to potential areas for strengthening social health insurance schemes to enhance their impact. Private Health Insurance Expenditures have shown a gradual increase from 6.6% in 2017-18 to 8.5% in 2021-22. This trend indicates a growing reliance on private insurance as a means of financing healthcare.

The rise in private insurance coverage may reflect increased awareness and demand for financial risk protection among the population. Household Health Expenditure, including insurance contributions, has decreased from 61.4% in 2017-18 to 50.6% in 2021-22. This decline suggests that households are bearing a lesser proportion of healthcare costs, aligning with the observed decrease in OOPE. The shift indicates progress toward reducing the financial burden on families through public health initiatives and insurance schemes. Finally, External/Donor Funding for health as a percentage of CHE has remained minimal but increased from 0.6% in 2017-18 to 1% in 2021-22. Although still a small proportion, the increase reflects enhanced donor support, particularly considering global health challenges such as the pandemic.

#### **3.3. Antenatal Care Costs**

A comparative analysis of antenatal care costs across urban and rural areas reveals significant disparities between government and private healthcare providers. Table 3 summarizes these costs:

Urban		Rural		
Government	Private	Government	Private	
NA	12150	NA	9650	
1650	15900	1490	14125	
2850	23050	2210	15080	
1120	1300	3825	4445	
5620	52400	7525	45300	
	Urban Government NA 1650 2850 1120 5620	UrbanGovernmentPrivateNA1215016501590028502305011201300562052400	UrbanRuralGovernmentPrivateGovernmentNA12150NA165015900149028502305022101120130038255620524007525	

Table 3Analysis of Antenatal Care Costs in Urban and Rural Areas

Source: Field Study

Consultation fees are applicable only in private healthcare settings. Urban private facilities charge ₹12,150, while rural private facilities charge ₹9,650. Government facilities do not charge consultation fees, reflecting efforts to provide cost-free services to the population. There is a stark contrast in medicine costs between government and private facilities. Private providers in urban areas charge ₹15,900, whereas rural private facilities charge ₹14,125. In comparison, government facilities in urban and rural areas charge ₹1,650 and ₹1,490, respectively. Diagnostic tests are significantly more expensive in private healthcare facilities. Urban private facilities charge ₹23,050, compared to ₹15,080 in rural private settings. Government facilities charge much lower fees, with urban and rural areas, reflecting the distance patients must travel to access healthcare. Rural patients incur costs of ₹3,825 in government and ₹4,445 in private facilities, while urban costs are ₹1,120 and ₹1,300, respectively. Total antenatal care costs are highest in urban private facilities (₹45,300). Government services are significantly more affordable, with urban costs at ₹5,620 and rural costs at ₹7,525.

#### 3.4. Birth Delivery Costs

The analysis of birth delivery costs, presented in Table 4, similarly highlights significant differences between urban and rural areas and between government and private providers.

Analysis of Birth Delivery costs Care Costs in Urban and Rural Areas						
Dirth Dolivory agets	Urban		Rural			
Dif til Denver y costs	Government	Private	Government	Private		
Consultation	NA	22500	NA	15500		
Medicine	1150	18500	850	16500		
Tests	1900	15000	1100	11500		
Travel/lodging	2450	3750	5700	6100		
Total	5500	59750	7650	49600		

]	Table 4		
analysis of Birth Delivery costs	Care Costs in U	U <b>rban and</b>	<b>Rural Areas</b>

Source: as ex ante

Consultation fees in private healthcare settings for birth delivery are higher than those for antenatal care. Urban private facilities charge ₹22,500, while rural private facilities charge ₹15,500. No consultation fees are charged in government facilities. Medicine costs remain high in private facilities, with urban private providers charging ₹18,500 and rural private providers charging ₹16,500. Government facilities charge substantially less, with urban and rural costs at ₹1,150 and ₹850, respectively. Private facilities charge significantly more for diagnostic tests during delivery. Urban private facilities charge ₹15,000, while rural private facilities charge ₹11,500. Government facilities in urban and rural areas charge ₹1,900 and ₹1,100, respectively. As with antenatal care, travel and lodging costs are higher in rural areas. Rural patients incur ₹5,700 in government and ₹6,100 in private facilities, compared to urban costs of ₹2,450 and ₹3,750, respectively. The total costs for birth delivery are highest in urban private facilities (₹9,750), followed closely by rural private facilities (₹49,600). Government services remain significantly more affordable, with urban costs at ₹5,500 and rural costs at ₹7,650.

#### **3.5 Family Planning Expenditure**

Table 5 presents the costs associated with family planning services in urban and rural areas, highlighting significant cost disparities between government and private providers.

Analysis of Family Planning Expenditure in Urban and Rural Areas						
Family Dianning Evnanditure	Urban		Rural			
Faimry Flamming Expenditure	Government	Private	Government	Private		
Consultation	NA	5700	NA	3400		
Medicine	850	9600	550	6200		
Tests	500	3500	310	2100		
Travel/lodging	1250	1450	1450	1750		
Total	2600	20250	2310	13450		

Table 5Analysis of Family Planning Expenditure in Urban and Rural Areas

Source: as ex ante

Consultation fees are applicable only in private facilities. Urban private healthcare charges  $\xi$ 5,700, while rural private facilities charge  $\xi$ 3,400. Government services offer consultations at no cost, enhancing accessibility for low-income populations. Medicines constitute a significant portion of family planning expenditure. Urban private facilities charge  $\xi$ 9,600, compared to  $\xi$ 6,200 in rural private settings. Government facilities offer more affordable services, with costs at  $\xi$ 850 in urban areas and  $\xi$ 550 in rural areas. Diagnostic tests are more expensive in private facilities charge  $\xi$ 500 in urban and  $\xi$ 310 in rural areas, reflecting their affordability. Travel and lodging expenses are higher in rural areas due to longer distances. Rural private services in rural areas charge  $\xi$ 1,450, slightly higher than urban government facilities at  $\xi$ 1,250. Total family planning costs are highest in urban private facilities at  $\xi$ 20,250, followed by rural private facilities at  $\xi$ 2,600 and rural costs at  $\xi$ 2,310.

#### 3.6. Costs of Pregnancy related Complications

Table 6 highlights the costs associated with managing pregnancy-related complications, comparing urban and rural areas across government and private healthcare providers.

Areas						
Somiage/Costs	Urban		Rural			
Services/Costs	Government	Private	Government	Private		
Consultation	NA	4200	NA	3200		
Medicine	1250	11500	750	7700		
Tests	1550	5250	1000	3200		
Travel/lodging	1150	1350	1550	1750		
Total	3950	22300	3300	15850		

 Table 6

 Analysis of Other Pregnancy related Complications Expenditure in Urban and Rural

Source: as ex ante

Consultation costs in private healthcare settings are ₹4,200 in urban areas and ₹3,200 in rural areas. Government facilities provide consultations free of charge, promoting financial accessibility for patients facing complications. Medicine costs are notably higher in private facilities, with urban private services charging ₹11,500 and rural private services charging ₹7,700. Government services remain more affordable, with costs of ₹1,250 in urban and ₹750 in rural areas. The cost of diagnostic tests is significant in private facilities, with urban private costs at ₹5,250 and rural private costs at ₹3,200. Government facilities offer more affordable options at ₹1,550 in urban and ₹1,000 in rural areas. Travel and lodging expenses are consistent across services, with rural private facilities incurring higher costs (₹1,750) compared to ₹1,150 in urban areas.

The total expenditure for managing pregnancy-related complications is highest in urban private facilities at ₹22,300, followed by rural private facilities at ₹15,850. Government services remain significantly more affordable, with urban costs at ₹3,950 and rural costs at ₹3,300.

The findings highlight significant disparities in healthcare costs between urban and rural areas and between government and private providers. Private healthcare services are consistently more expensive across all categories, posing a significant financial burden on families, particularly in rural areas. The higher travel and lodging costs in rural areas suggest limited access to nearby healthcare facilities, necessitating long-distance travel.

Government healthcare services offer a more affordable alternative, underscoring their importance in ensuring equitable access to maternal healthcare. However, the data also emphasizes the need for targeted interventions to reduce out-of-pocket expenses and improve access to quality healthcare, particularly in rural regions.

The analysis highlights substantial cost differences between government and private healthcare services in both urban and rural areas. Private healthcare services consistently incur higher costs, particularly for consultations and medicines. Rural areas face additional travel and lodging expenses, reflecting access challenges.

Government services provide more affordable care, emphasizing their critical role in reducing financial barriers for families. However, the costs of travel and medicines, even in government facilities, remain a concern, particularly in rural areas. The findings underscore the need for targeted interventions to reduce out-of-pocket expenses and improve access to affordable care, especially for vulnerable populations in rural regions.

# **3.7** Analysis of Percentage of Income Spent on Health Expenditure by Different Income Groups:

Health expenditure represents a significant financial burden for households, particularly in lowand middle-income countries. Understanding the proportion of income spent on healthcare by different income groups provides critical insights into financial strain and the equity of healthcare access. This section analyses the percentage of total income spent on health by households across five income groups, based on data from a field study.

Table 7 provides a breakdown of the percentage of income allocated to health expenditure by different income brackets. The data is categorized into four spending ranges: below 10%, 10-20%, 20-30%, and above 30% of total income.

refeatinge of income Spent on Health Expenditure by Different income Groups						
% of Health						
Expenditure						
in Total	below	15000-	20000-	25000-	above	
Income	15000	20000	25000	30000	30000	Total
Below 10%	8	12	14	20	17	71
	(3.20)	(4.80)	(5.60)	(8.00)	(6.80)	(28.40)
10%-20%	9	9	12	17	16	63
	(3.60)	(3.60)	(4.80)	(6.80)	(6.40)	(25.20)
20%-30%	7	10	13	21	14	65
	(2.80)	(4.00)	(5.20)	(8.40)	(5.60)	(26.00)
above 30%	6	8	10	14	13	51
	(2.40)	(3.20)	(4.00)	(5.60)	(5.20)	(20.40)
Total	30	39	49	72	60	250
	(12.00)	(15.60)	(19.60)	(28.80)	(24.00)	(100.00)

 Table 7

 Percentage of Income Spent on Health Expenditure by Different Income Groups

Source: Field Study

Note: Figures in brackets are percentages

The analysis of health expenditure as a percentage of total income across different income groups reveals significant disparities in financial burdens. A closer examination of households spending less than 10% of their income on health shows that 71 households (28.40%) fall into this category. Among these, the highest proportion is observed in the ₹25,000-30,000 income group, accounting for 8.00% of households, followed by 6.80% in the above ₹30,000 category. These figures suggest that households in higher income brackets are more likely to manage their health expenses within this threshold, possibly due to access to insurance or public healthcare services that mitigate out-of-pocket costs.

In the 10-20% expenditure bracket, 63 households (25.20%) are reported. Interestingly, the distribution across income groups is relatively balanced, with notable representation in both the ₹25,000-30,000 and above ₹30,000 brackets, accounting for 6.80% and 6.40% respectively. This indicates that even higher-income households experience moderate financial pressure due to healthcare costs. However, the relatively even spread across income groups highlights the pervasive nature of healthcare expenditure burdens across socioeconomic strata, emphasizing the need for broader financial protection mechanisms.

Households spending between 20-30% of their income on health, totalling 65 households (26.00%), present a more concerning picture. The highest proportion is seen in the ₹25,000-30,000 income group (8.40%), followed by 5.20% in the ₹20,000-25,000 bracket. This suggests that middle-income households, despite earning relatively higher incomes, are disproportionately affected by health expenses. The significant financial stress faced by these groups may stem from a reliance on private healthcare services and limited access to affordable public health options.

The most alarming findings are among households spending more than 30% of their income on health, categorized as catastrophic health expenditure. A total of 51 households (20.40%) falls into this category. The highest incidence is in the ₹25,000-30,000 group (5.60%), followed closely by 5.20% in the above ₹30,000 bracket. This underscores the vulnerability of even higher-income households to financial impoverishment due to health-related expenses. The presence of catastrophic expenditure across income groups highlights systemic issues, including high out-of-pocket costs and gaps in insurance coverage.

The overall distribution of health expenditure across income groups points to significant financial risks faced by households, especially those in middle-income brackets. The findings highlight the urgent need for policy interventions aimed at reducing out-of-pocket healthcare costs and enhancing financial protection. Expanding insurance coverage, improving access to affordable healthcare services, and strengthening public health infrastructure are crucial strategies to alleviate the financial burden on households and ensure equitable access to health services. Without targeted policy responses, the financial strain on households is likely to persist, undermining broader efforts to achieve universal health coverage and equitable healthcare access.

#### 3.8 Chi-Square Test of Independence:

To test the independence of income levels and health expenditure, a **Chi-Square Test of Independence** is appropriate. I will perform the test using the given contingency table data. The null and alternative hypothesis corresponding to the test are defined as,

Null Hypothesis (H<sub>0</sub>): Income level and health expenditure are independent.

Alternative Hypothesis (H<sub>1</sub>): Income level and health expenditure are not independent.

Chi-square Contingency Table Test for Independence							
		below 15000	15000-20000	20000-25000	25000-30000	above 30000	Total
Below 10%	Observed	8	12	14	20	17	71
	Expected	8.52	11.08	13.92	20.45	17.04	71.00
10%-20%	Observed	9	9	12	17	16	63
	Expected	7.56	9.83	12.35	18.14	15.12	63.00
20%-30%	Observed	7	10	13	21	14	65
	Expected	7.80	10.14	12.74	18.72	15.60	65.00
above 30%	Observed	6	8	10	14	13	51
	Expected	6.12	7.96	10.00	14.69	12.24	51.00
Total	Observed	30	39	49	72	60	250
	Expected	30.00	39.00	49.00	72.00	60.00	250.00
1.2095 chi-square							
		12	df				
		.99996	p-value				

By using the Excel, the test results found as shown below:

The test statistics value is **1.2095** and the corresponding P-value is approximately 1, indicating no evidence to reject the null hypothesis. This implies that the differences between observed and expected frequencies are minimal and that income level and percentage of income spent on health expenditure are **independent**. Therefore, there is **no significant association** between income levels and the percentage of income spent on health expenditure.

## 4. Conclusion:

The analysis of health expenditure across various categories—antenatal care, birth delivery, family planning, and pregnancy-related complications—reveals significant cost disparities between government and private services, with private care being substantially more expensive. Rural populations and lower-income groups bear a disproportionate financial burden, with many households spending over 20% of their income on healthcare. Additionally, women face a "triple burden" of healthcare costs, including non-communicable diseases, communicable diseases, and reproductive health expenses.

Trends from 2017 to 2022 show an increase in government health expenditure (GHE) and a decline in out-of-pocket expenditure (OOPE), signaling progress in financial protection. However, OOPE remains high, particularly in Andhra Pradesh, compared to national averages, highlighting the need for targeted interventions.

Policy recommendations include strengthening public healthcare infrastructure, expanding financial protection for low-income groups, enhancing maternal health programs, and increasing public funding to reduce the reliance on private services and OOPE. These measures are essential for achieving equitable and sustainable healthcare access.

#### **References:**

- Sudha SS, Rajan SI (1999) Female demographic disadvantage in India 1981–1991: Sex selective abortions and female infanticide. Development and change. 30(3):585–618. pmid:20162850.
- Canudas-Romo V, Saikia N, Diamondsmith N (2015) The contribution of age-specific mortality towards male and female life expectancy differentials in India and selected States, 1970–2013. Asia-Pacific Population Journal 30:(2).
- Kurz K M, Johnson-Welch C (1997) Gender differences among children 0–5 years: an opportunity for child survival interventions. A review paper prepared for the BASICS project. USAID/BASICS II, Arlington, VA.
- Asfaw A, Klasen S, Lamanna F. Intra-household gender disparities in children's medical care before death in India. Institute for the Study of Labor (IZA) Discussion Paper. 2007(2586).
- Sen G, Iyer A, George A. Class, gender and health equity: lessons from liberalizing India. Engendering international health: The challenge of equity. 2002:281–311.
- Saikia N, Jasilionis D, Ram F, Shkolnikov VM (2011) Trends and geographic differentials in mortality under age 60 in India. Population studies. 65(1):73–89. pmid:21240833.
- Behrman JR (1988) Intrahousehold allocation of nutrients in rural India: Are boys favored? Do parents exhibit inequality aversion?. Oxford Economic Papers. 1:32–54.
- ➢ Hill K, Upchurch DM (1995) Gender differences in child health: evidence from the demographic and health surveys. Population and Development Review. 1:127−51.
- State Health Accounts Estimates for Andhra Pradesh 2019-20
- National Health Accounts Estimates for India 2019-20