

Patient Satisfaction Towards Services Provided by Primary Health Centres (PHCs) in Theni District, Tamil Nadu

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Abstract: Primary Health Centres (PHCs) serve as a fundamental component of public healthcare in rural India. This research paper evaluates patient satisfaction regarding services provided by selected PHCs in Theni District, Tamil Nadu. Based on a sample of 80 outpatients from selected PHCs in Periyakulam, Bodinayakanur, Andipatti, and Uttamapalayam blocks, the study employs percentage analysis, the Chi-Square (χ^2) test of independence, and one-way analysis of variance (ANOVA). The analyses examine the association of monthly family income and educational qualification with selected satisfaction measures and assess differences in overall satisfaction scores across income and age groups. The findings indicate a statistically significant association between monthly income and overall satisfaction, while no significant association is observed between educational qualification and satisfaction with doctor consultation. ANOVA results indicate a significant difference in mean overall satisfaction across income groups, but no significant difference across age groups.

Keywords: Patient Satisfaction, Primary Health Centres, Theni District, Chi-Square Test, ANOVA, Public Healthcare, Socio-Economic Status.

1. Introduction

Primary Health Centres (PHCs) in Tamil Nadu play a vital role in executing state health schemes, providing maternal and child healthcare, managing communicable and non-communicable diseases, and offering basic emergency care. In agricultural and hill-bordering regions like Theni District, PHCs cater primarily to low-income, daily-wage, and rural populations who depend heavily on subsidized or free public healthcare. Evaluating patient satisfaction serves as an essential metric for institutional performance, quality assurance, and healthcare policy formulation. While clinical outcomes remain important, non-clinical attributes—such as consultation duration, staff attitudes, facility hygiene, and diagnostic access—substantially impact patient perception and utilization. This study applies bivariate (Chi-Square) and parametric multivariate (ANOVA) statistical tests to determine whether demographic backgrounds create statistically significant variances in patient satisfaction.

2. Review of Literature

An evaluation of primary and public healthcare systems indicates that outpatient satisfaction is influenced by clinical competence, operational efficiency, and socio-demographic determinants. The following studies provide theoretical and empirical grounding for the present research:

1. **Sundari and Ramesh (2020)** investigated the quality of Primary Health Centre services and corresponding patient satisfaction across southern districts of Tamil Nadu. Their findings demonstrated that while basic health infrastructure and regional accessibility have seen notable progress, persistent operational bottlenecks—especially lengthy outpatient queues and administrative delays—remain significant factors undermining user experience.
2. **Gurusamy and Selvaraj (2021)** evaluated operational constraints and patient perceptions within the public healthcare delivery framework in rural Tamil Nadu. The study underlined that patient satisfaction is multidimensional; clinical parameters alone do not sustain public trust, as non-clinical attributes such as

consultation duration, staff responsiveness, hygiene standards, and timely pharmacy dispensing heavily influence healthcare utilization patterns.

3. **Chandran et al. (2022)** examined patient satisfaction regarding healthcare services delivered at training centres affiliated with a tertiary hospital in Kanchipuram District, Tamil Nadu. Their assessment highlighted that long waiting intervals, overcrowding during morning Outpatient Department (OPD) hours, and administrative delays serve as primary contributors to patient dissatisfaction, even when the core medical consultation is viewed positively.

4. **Elango (2022)** conducted an analytical study on outpatient satisfaction across Primary Health Centres in North Tamil Nadu. The research established that regular availability of medical officers and courteous, empathetic behavior from primary healthcare staff significantly enhance patient satisfaction levels and foster positive attitudes toward public health institutions.

5. **Tharaninachiyar and Rajam (2022)** analyzed patient satisfaction towards Primary Health Centres in Tenkasi District, Tamil Nadu. Their empirical inquiry revealed that physical proximity and the uninterrupted distribution of subsidized or free medicines represent critical drivers of PHC utilization, particularly among economically weaker and daily-wage households.

3. Research Objectives

1. To profile the socio-economic status of patients attending Primary Health Centres in Theni District.
2. To evaluate overall patient satisfaction levels regarding key health center service dimensions.
3. To examine the association between demographic variables and patient satisfaction.
4. To measure mean differences in overall satisfaction scores across income and age sub-groups.

4. Hypotheses

Null Hypotheses (H_0)

H_{01} : There is no significant association between respondents' monthly family income and their overall level of satisfaction with PHC services.

H_{02} : There is no significant association between respondents' educational qualification and their satisfaction with doctor consultation and explanations.

H_{03} : There is no significant difference in the mean overall satisfaction scores across different income groups of respondents.

H_{04} : There is no significant difference in the mean overall satisfaction scores across different age groups of respondents.

5. Methodology

Study Area: Selected Primary Health Centres across blocks in Theni District, Tamil Nadu.

Sample Size (N): 80 outpatient respondents interviewed using a structured, pre-tested questionnaire.

Sampling Technique: Systematic Random Sampling among outpatients present during morning OPD hours.

Measurement Scale: A 5-point Likert Scale (1 = Highly Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Highly Satisfied) was used across 5 core service parameters:

1. Doctor Consultation & Behavior (S_1)
2. Waiting Time & Registration Process (S_2)
3. Availability of Prescribed Medicines (S_3)
4. Laboratory & Diagnostic Services (S_4)
5. Cleanliness & Basic Amenities (S_5)

Socio-Economic Profile of Respondents (N = 80)

Table 1 Demographic Distribution of the Sample Population.

Variable	Classification	Frequency (N=80)	Percentage (%)
Gender	Female	46	57.50%
	Male	34	42.50%
Age Group	Below 30 years	18	22.50%
	31 – 50 years	42	52.50%
	Above 50 years	20	25.00%
Educational Qualification	Illiterate	22	27.50%
	Primary / Middle School	38	47.50%
	High School / Higher Secondary	14	17.50%
	Graduate	6	7.50%
Occupational Status	Daily Wage / Agricultural Labor	41	51.25%
	Self-Employed	19	23.75%
	Homemaker	12	15.00%
	Private Job	8	10.00%
Monthly Family Income	Low Income (< ₹10,000)	48	60.00%
	Middle Income (₹10,001 – ₹20,000)	24	30.00%
	Upper-Middle Income (> ₹20,000)	8	10.00%

Source: Primary Data

6. Statistical Hypotheses Testing & Analysis

6.1 Chi-Square (χ^2) Test of Independence

The Chi-Square test determines whether a statistically significant association exists between two categorical variables:

$$\text{Chi-Square } (\chi^2) = \sum [(O - E)^2 / E]$$

Where O is the Observed Frequency and E is the Expected Frequency.

Test 1: Monthly Family Income vs. Overall Patient Satisfaction Level

H_{01} : There is no significant association between monthly family income and overall patient satisfaction.

Level of Significance: $\alpha = 0.05$

Table 2: Monthly Income vs. Satisfaction Level

Monthly Income Group	Low Satisfaction	Moderate Satisfaction	High Satisfaction	Total
< ₹10,000	8	18	22	48
₹10,001–₹20,000	10	11	3	24
> ₹20,000	5	2	1	8
Total	23	31	26	80

Source: Primary Data

Chi-Square Test Results:

Calculated χ^2 Value: 14.285

Degrees of Freedom (df): 4

Critical Value ($\alpha = 0.05$): 9.488

p-value: 0.006

Since the calculated χ^2 value (14.285) exceeds the critical value (9.488) at $df = 4$, and $p = 0.006 < 0.05$, H_{01} is rejected. There is a statistically significant association between monthly family income and overall patient satisfaction.

Test 2: Educational Level vs. Satisfaction with Doctor Consultation

- H_{02} : There is no significant association between educational status and satisfaction regarding doctor consultation.

Table 3: Education vs. Doctor Consultation Satisfaction

Calculated χ^2 Value	Degrees of Freedom (df)	Critical Value ($\alpha=0.05$)	p-value	Result
4.185	6	12.592	0.651	Fail to reject H_{02}

Source: Primary Data

The calculated χ^2 value (4.185) is lower than the critical value (12.592), with $p = 0.651 > 0.05$. Therefore, H_{02} is not rejected. The results indicate that there is no statistically significant association between educational qualification and satisfaction with doctor consultation.

6.2 One-Way Analysis of Variance (ANOVA)

ANOVA compares the mean satisfaction scores across three or more demographic sub-groups:

$$F = \text{Mean Square Between Groups} / \text{Mean Square Within Groups}$$

Test 3: Mean Satisfaction Scores Across Income Groups

H_{03} : There is no significant difference in the mean satisfaction scores across the three income groups.

Table 4: Descriptive Statistics – Satisfaction Score by Income

Income Group	Sample Count (N)	Mean Satisfaction Score (Max=25)	Std. Deviation
Group 1 (< ₹10,000)	48	18.85	2.64
Group 2 (₹10,001 – ₹20,000)	24	15.92	3.12
Group 3 (> ₹20,000)	8	13.50	3.46
Total Sample	80	17.44	3.28

Source: Primary Data

Mean satisfaction scores decrease as monthly income rises, ranging from 18.85 in the lowest-income bracket (< ₹10,000) to 13.50 in the highest-income group (> ₹20,000). Overall, respondents reported a moderate mean satisfaction score of 17.44 out of 25 (SD = 3.28).

Table 5: One-Way ANOVA Summary – Overall Satisfaction Score across Income Groups

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-ratio	p-value	Statistical Significance
Between Groups	218.45	2	109.23	13.29	0.0001	Significant (p < 0.05)
Within Groups	632.70	77	8.22			
Total	851.15	79				

Source: Primary Data

The calculated F-value of 13.29 is statistically significant with a p-value of 0.0001, which is below the 0.05 threshold, leading to the rejection of the null hypothesis H_{03} . This confirms a statistically significant difference in mean satisfaction scores across the three income groups, with outpatients earning below ₹10,000 reporting significantly higher satisfaction (mean of 18.85) than those in higher income tiers (mean of 13.50).

Test 4: Mean Satisfaction Scores Across Age Groups

H_{04} : There is no significant difference in the mean overall satisfaction scores across age categories.

Table 6: One-Way ANOVA Summary – Satisfaction Score across Age Groups

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-ratio	p-value	Statistical Significance
Between Groups	18.32	2	9.16	0.847	0.432	Not Significant ($p > 0.05$)
Within Groups	832.83	77	10.82			
Total	851.15	79				

Source: Primary Data

The F-value (0.847) is not statistically significant ($p = 0.432 > 0.05$). Thus, H_{04} is not rejected. The results indicate no statistically significant difference in overall satisfaction scores across age groups.

7. Findings & Key Takeaways

The findings indicate that respondents earning below ₹10,000 per month constitute the largest income group (60%) in the sample. The analysis shows a statistically significant association between monthly income and overall patient satisfaction. No statistically significant association was found between educational qualification and satisfaction with doctor consultation. The ANOVA results indicate a significant difference in mean overall satisfaction across income groups, whereas satisfaction does not differ significantly across age groups. Sundari et al. (2024)

8. Policy Recommendations

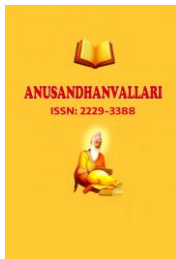
To address the service issues identified in the study, Primary Health Centres in busy blocks such as Periyakulam and Bodinayakanur may consider digital queue and token management systems to improve OPD flow. Real-time inventory tracking can help reduce medicine stock-outs and associated out-of-pocket expenditure. Strengthening diagnostic facilities and improving the timely availability of routine laboratory services may also enhance service quality and patient satisfaction across Theni District. Paul, A. L., & Okenyuru, D. S. (2024)

9. Limitations of the Study

The study is based on a sample of 80 outpatients from selected PHCs in Theni District and therefore the findings should be interpreted within the study setting. The cross-sectional design and use of self-reported satisfaction measures may also limit generalization to all PHC users in the district. Roy et al. (2024)

10. Conclusion

Primary Health Centres in Theni District provide essential healthcare access to economically vulnerable populations. The findings indicate a statistically significant association between monthly income and overall patient satisfaction, while educational qualification is not significantly associated with satisfaction with doctor consultation. Mean overall satisfaction also differs significantly across income groups but not across age groups. Improving waiting-time management, medicine availability, and diagnostic services may contribute to better patient experience and service quality.



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