

**UNDERSTANDING THE IMPACT OF CHRONIC DISEASES ON LOW AND MIDDLE-
INCOME FAMILIES: A COMPREHENSIVE STUDY****Jesima Begum A.^{1*}, Angel M.², Elakiya R.², Jenifer Virjeela J.² and Senthamarai R.³**^{1*} Associate Professor, Department of Pharmacy Practice, Periyar College of Pharmaceutical Sciences, Tiruchirappalli – 620 021, Tamilnadu, India.² Periyar College of Pharmaceutical Sciences, Tiruchirappalli – 620 021, Tamilnadu, India.³ Principal, Department of Pharmacognosy, Periyar College of Pharmaceutical Sciences, Tiruchirappalli – 620 021, Tamilnadu, India.***Corresponding Author: Jesima Begum A.**

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ABSTRACT

The cross-sectional study conducted in Tiruchirappalli district sheds light on the prevalence and impact of chronic diseases, revealing higher rates in urban (57.14%) than rural areas (42.86%). Females, middle-class individuals, and those aged 40-49 are disproportionately affected. Diabetes, affecting 20%, emerges as a prominent concern. Monthly medical expenses (25.71%) in the Rs.1000-2000 range underscore financial challenges. Despite this, 77.14% of patients reported controlled diseases post-treatment, positively impacting their quality of life. Common symptoms include fatigue and palpitations, emphasizing the need for early detection. Mental health is significantly affected (54.28%), necessitating integrated support. The study underscores the role of government healthcare facilities, with 77.14% of patients regularly seeking medical attention. This comprehensive analysis provides insights into the multifaceted challenges posed by chronic diseases, emphasizing the importance of targeted interventions, early detection, and integrated healthcare strategies. Awareness of government initiatives is crucial for alleviating financial burdens and promoting holistic well-being.

KEYWORDS: Chronic Diseases, Low-Income Families, Middle-Income Families, Health Disparities, Healthcare Impact, Socioeconomic Challenges.**INTRODUCTION**

Chronic diseases are characterized by their persistency and often incurability, making them formidable challenges to public health around the globe.^[1] Diabetes mellitus, cardiovascular disease, cerebrovascular disease, cancer, chronic pulmonary diseases, and mental illness have established themselves as major health concerns worldwide. Smoking, alcohol consumption, physical inactivity,^[2] unhealthy dietary habits, and air pollution are all modifiable risk factors that contribute to the growing prevalence of Non-Communicable Diseases (NCDs).^[3] Particularly in India, chronic diseases are not only putting individual well-being at risk, but also affecting households and the nation as a whole.^[4] Increasing numbers of chronic diseases are threatening to diminish the quality of life for everyone, impede economic growth, and strain the resources of families. In the absence of responses to such financial burdens, households can fall into poverty, threatening the nation's economic and social prosperity.^[5,6] Additionally, escalating treatment costs and premature mortality add to the economic burden. Tamil Nadu faces a significant health challenge, with almost 70% of deaths attributed to Non-Communicable Diseases (NCDs),^[7] particularly

cardiovascular diseases, which alone account for 36% of deaths. Chronic diseases contribute to 65.3% of Disability Adjusted Life Years (DALY), with cardiovascular diseases being the major contributor.^[8] Mental health problems affect a considerable portion of the population, with nearly 6.7 million adults and 380,000 adolescents estimated to be impacted. Depression, anxiety disorders, and substance use disorders collectively affect 11% of the population.^[9] The Tamil Nadu Government has acknowledged the significance of mental health by implementing a separate Mental Health Policy and providing services through the District Mental Health Program, distinct from the NCD Program.^[10]

The study of the relationship between socioeconomic status (SES) and health has a longstanding scientific history. This connection has been observed since the rapid industrialization and urban migration, highlighting links between poor health and adverse living conditions associated with poverty.^[11] Disciplines such as medicine, epidemiology, sociology, demography, and economics have collectively contributed to establishing strong and consistent gradients between SES and health.^[12] This

comprehensive overview explores the complex web of factors contributing to the chronic diseases epidemic in Tamil Nadu, highlighting the need for a concerted, collaborative approach. In order to safeguard the well-being of low- and middle-income families, we must understand the widespread implications of chronic diseases and strategize effective interventions.

METHODOLOGY

A cross-sectional study was conducted in and around the Tiruchirappalli district. Patients were asked to complete a standard proforma and provided their consent before data was collected and analyzed. 35 patients were selected for the measurement of socio-economic status by means of B.G. Prasad’s scale

Study criteria

Inclusion criteria: Adult and elderly patients with chronic disease

Exclusion criteria: Childrens with chronic disease

Scales used for measurement of Socio-economic status

• **B.G. Prasad’s socio-economic status scale**

BG Prasad's scale was created in 1961 and modified in 1968 and 1970. The first BG Prasad's scale considered the base CPI for 1960 at 100. By introducing a linking

factor of 2.88, the Ministry of Labour amended the base year in October, 2020, changing it from 2001 to 2016. In the recent past, updates to the scale have been made, and a new online tool has been developed in light of the new base year of 2016. The scale has also been updated previously in real time using an online tool. The values given by the calculator, however, are no longer valid since the calculator uses 2001 as the base year. It is applicable to individual incomes because it is based on per capita monthly income (per capita monthly income = total family income/total family members). This scale has the advantage of only being dependent on the income variable, making it easy to calculate.

It is calculated as Monthly Per capita income = Total monthly income of the family/total number of members in family.

RESULTS

The patient’s socioeconomic status as per B.G. Prasad scale was recorded in the table 1.

Table 1: Patient’s socioeconomic status.

S.NO	Socio-economic variables	Study Population (N=35)	Percentage
1	Age of the patients		
	20-29	5	14.28
	30-39	6	17.14
	40-49	11	31.42
	50-59	8	22.85
	60-69	2	5.71
	70-79	2	5.71
2	Gender		
	Male	13	37.14
	Female	22	62.85
3	Place of Living		
	Urban	20	57.14
	Rural	15	42.85
4	Patient Education status		
	Primary	12	34.28
	Secondary	7	20
	Uneducated	6	17.14
	Degree	7	20
5	Employment status		
	Employed	16	45.71
	Unemployed	14	40
	Not-active	5	14.28
6	Chronic Disease		
	Diabetes	7	20
	Hypertension	4	11.42
	Heart disease	4	11.42
	Arthritis	2	5.71

	Asthma	2	5.71
	Cancer	1	2.85
	Thyroid	1	2.85
	PCOD	1	2.85
	Diabetes+ Hypertension	3	8.57
	Diabetes+ Stroke	1	2.85
	Allergy+ GIT Disease	1	2.85
	Asthma+ Allergy	1	2.85
	Anemia+ Arthritis	1	2.85
	Hypertension+ Diabetes+Stroke	1	2.85
	Diabetes+ Heart disease+Dementia	1	2.85
	Hypertension+ Asthma+Arthritis	1	2.85
	Asthma+ Allergy+ Anemia+Migration	1	2.85
	Hypertension+ Heart disease+ Asthma+ Kidney disease	1	2.85
7	Symptoms among patients		
	Fatigue	26	74.28
	Indigestion	8	22.85
	Palpitation	17	48.57
	Weight Loss	6	17.14
	Shortness of breath	14	40
	Chronic cough	6	17.14
	GI Disturbances	5	14.28
	Poor wound healing	4	11.42
	Frequent urination	7	20
	Stomach pain	5	14.28
	Weight gain	1	2.85
	Anxiety	1	2.85
	Difficulty in walking	1	2.85
8	Treatment facility		
	Govt Health Care Facility	12	34.28
	Private Health Care Facility	13	37.14
	Govt& Private Facility	10	28.57
	Chemist	0	0
	Traditional Healer	0	0
9	Distribution of Adverse effects		
	Yes	10	28.57
	No	25	74.28
10	Regularity of scheduled treatment		
	Yes	27	77.14
	No	8	22
11	Alternative System of medicine		
	Yes	6	17.14
	No	29	82.8
12	Condition of disease		
	Quality of life improved	6	17.14
	Quality of life worsened	0	0
	Disease controlled	27	77.14
	Disease provoked	2	5.7
13	Impact of chronic Disease		
	Family education	0	0
	Family income	6	17.14
	Mental health	19	54.28
	Mental health & Income	3	8.57
	Mental health & Education	1	2.85
	Education &Income	1	2.85
	Others	3	8.57
14	Medical Expenses		
	Below 1000	5	14.28

	1000-2000	9	25.71
	2000-3000	5	14.28
	3000-4000	5	14.28
	Above 4000	2	5.71
	Free of cost	8	22.85
15	Income Range		
	5,000-10,999	6	17.14
	11,000-15,999	10	28.57
	16,000-25,999	12	34.28
	26,000-35,999	4	11.42
	36,000-40,000	2	5.71

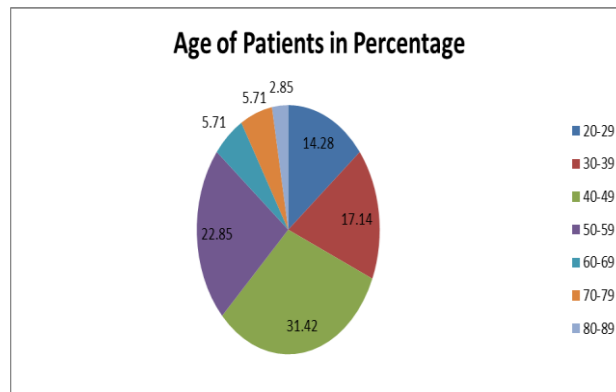


Figure 1: Age of patients.

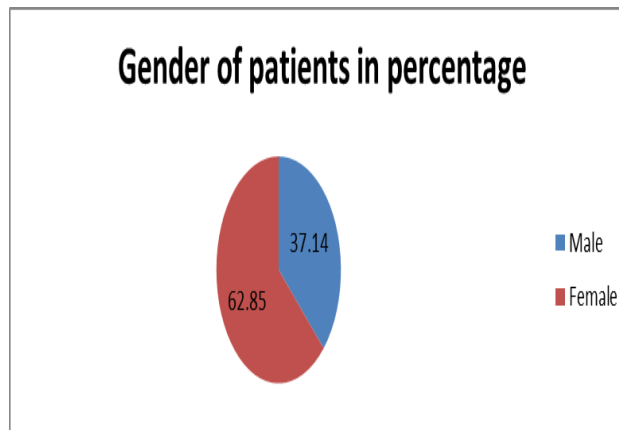


Figure 2 Gender of patients.

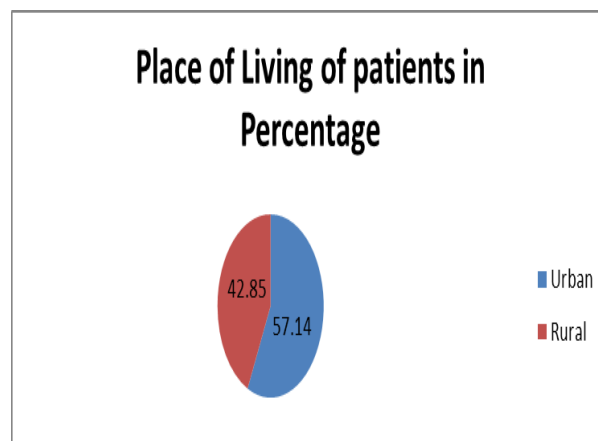


Figure 3: Place of Living of patients.

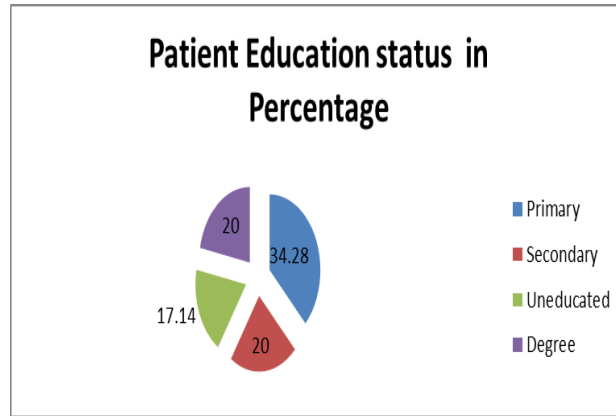


Figure 4: Patient education status.

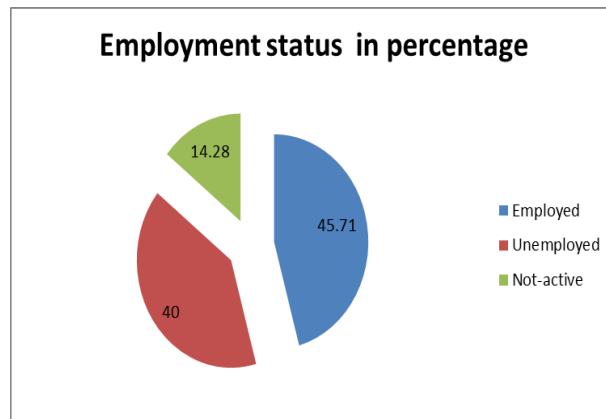


Figure 5: Employment status.

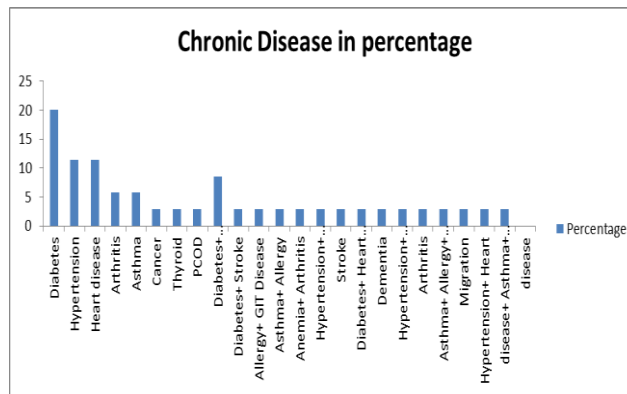


Figure 6: Chronic disease.

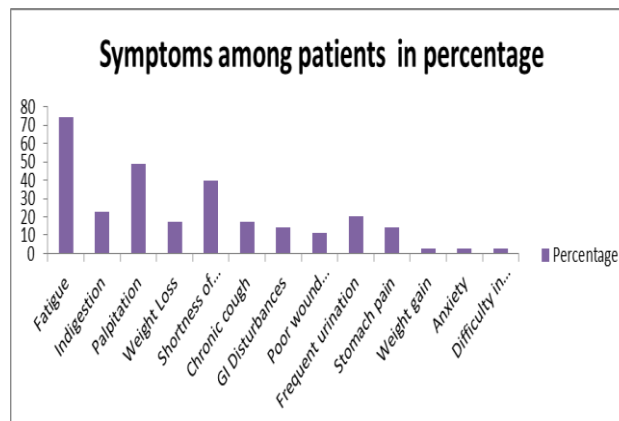


Figure 7: Symptoms among patients.

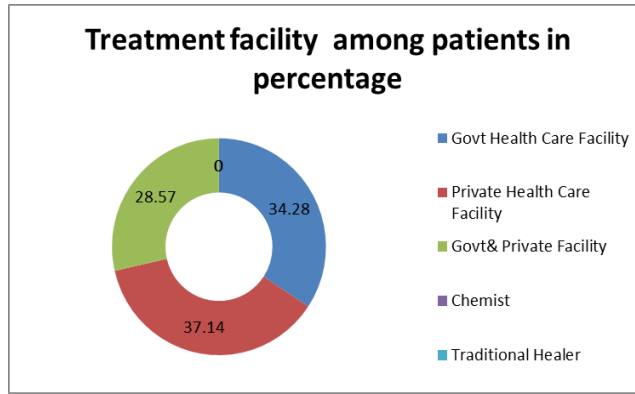


Figure 8: Treatment facilities among patients.

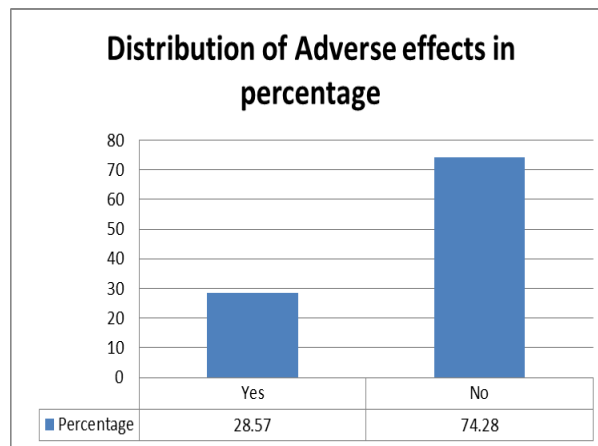


Figure 9: Distribution of adverse effects.

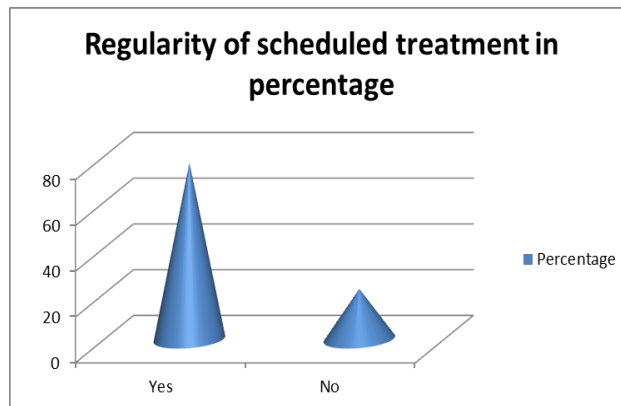


Figure 10: Regularity of scheduled treatment.

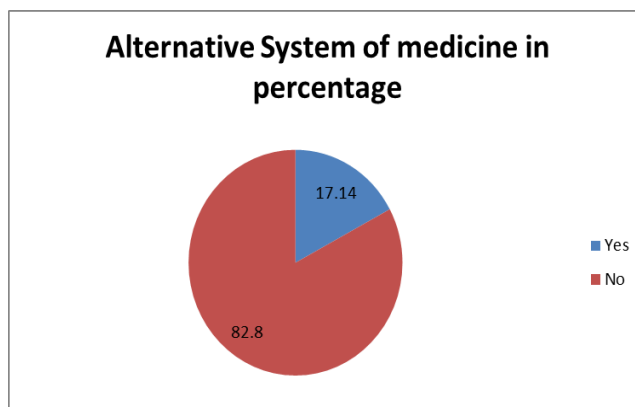


Figure 11: Alternative System of medicine.

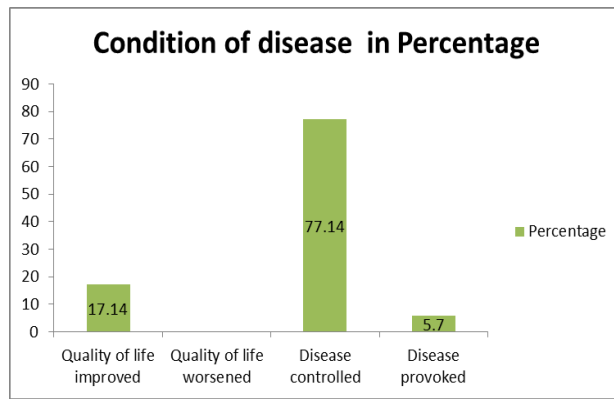


Figure 12: Condition of disease.

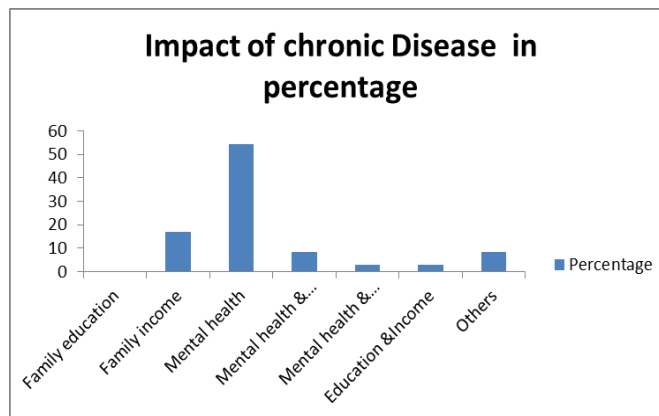


Figure 13: Impact of chronic disease.

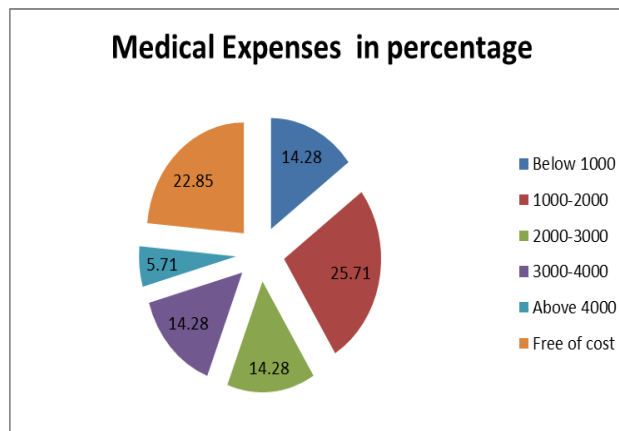


Figure 14: Medical expenses.

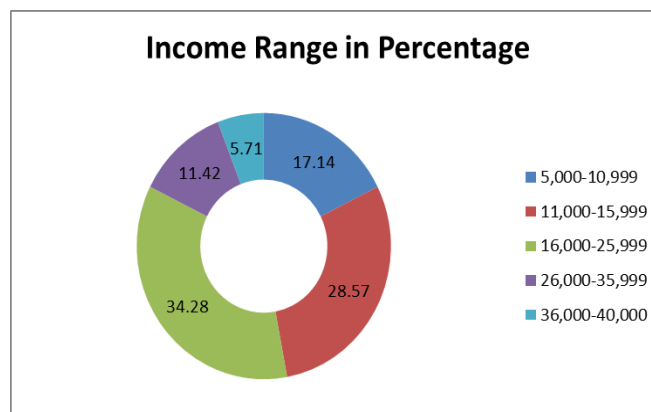
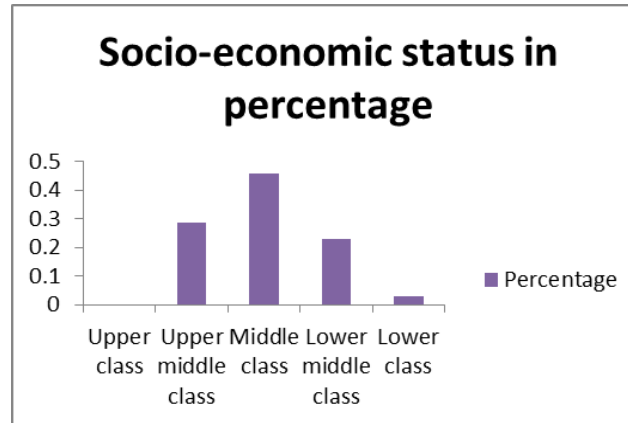


Figure 15: Income range.

Table 2: Categorization of Socio Economic Status of Patients (N=35) (Based on B G Prasad scale).

Socio-economic status	Revised classification for 2023	Study Population (N=35)	Percentage
Upper class	8763 and above	0	-
Upper middle class	4381.5-8675.3	10	28.57%
Middle class	2630-4294	16	45.71%
Lower middle class	1314.5-2541.27	8	22.85%
Lower class	<1314.5	1	2.85%

**Figure 16: Socio-economic status.**

DISCUSSION

The cross-sectional study conducted in and around Tiruchirappalli district provided valuable insights into the prevalence and impact of chronic diseases on the population. The study revealed a higher occurrence of chronic diseases in urban areas (57.14%) compared to rural areas (42.86%). This highlights the need for targeted healthcare interventions in urban settings. Females were found to be more significantly affected by chronic diseases than males. Understanding gender-specific health needs is crucial for effective healthcare planning. The socioeconomic analysis, using B.G. Prasad classification, indicated that middle-class individuals (45.71%) were more affected. Lower-middle-class individuals (22.85%) and those in the lower class (2.85%) also faced the burden of chronic diseases. A substantial portion of patients (25.71%) incurred monthly medical expenses in the range of Rs. 1000-2000, constituting a significant proportion of the family's income. This underscores the financial strain associated with managing chronic conditions. The age group of 40 to 49 years had the highest representation (31.42%), emphasizing the need for targeted preventive measures and health promotion in this age demographic. Diabetes emerged as the most prevalent chronic disease, affecting 20% of the study population. This calls for specific public health initiatives focused on diabetes prevention and management. Encouragingly, a significant percentage (77.14%) of patients reported controlled diseases after treatment, contributing to improved quality of life (17.14%). This highlights the positive impact of healthcare interventions. Fatigue and palpitations were identified as common symptoms. Understanding these prevalent symptoms can aid in early detection and intervention. Chronic diseases had a notable impact on

mental health, affecting 54.28% of the study population. Integrating mental health support into chronic disease management is crucial. A majority of patients (77.14%) regularly sought medical attention, indicating trust in healthcare facilities and adherence to prescribed treatments. The study emphasizes the significant role of government healthcare facilities in managing chronic diseases. Increasing awareness of government schemes and healthcare programs is essential for mitigating medical expenses.

CONCLUSION

The researchers concluded that chronic diseases present a variety of challenges, highlighting the need for a holistic, community-centered healthcare approach that addresses the multifaceted challenges posed by chronic diseases. As well as addressing socioeconomic factors, gender-specific health needs, and mental health aspects, targeted interventions can also contribute to the management of chronic diseases in a more effective manner. There is a need for increased access to healthcare resources and public awareness campaigns in order to address the growing impact of chronic diseases on low- and middle-income families in order to overcome the growing burden of chronic diseases.

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