

SOCIAL DETERMINANTS OF HEALTH AND THEIR ASSOCIATION WITH SELF-REPORTED CHRONIC DISEASES AMONG ADULTS IN TUDUN WADA, ZARIA, NIGERIA

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ABSTRACT

Chronic non-communicable diseases (NCDs) are an increasing public health concern in Nigeria, with growing evidence that social determinants of health (SDOH) influence their distribution. Primary health care-oriented, community-level data remain limited in northern Nigeria. This study examined the association between selected SDOH and self-reported chronic diseases among adults in Tudun Wada, Zaria. A community-based cross-sectional study was conducted among 385 adults selected using a multistage sampling technique. Data were collected using an interviewer-administered questionnaire assessing structural and intermediary SDOH, healthcare-seeking behaviour, and self-reported physician-diagnosed chronic diseases. Data were analysed using descriptive statistics and multivariable logistic regression. Adjusted odds ratios (AOR) with 95% confidence intervals (CI) were reported at a 5% significance level. Overall, 66.0% of respondents reported at least one chronic condition, a prevalence likely influenced by self-reporting. Low monthly income (< ₦20,000) was associated with higher odds of reporting a chronic disease (AOR = 1.84; 95% CI: 1.12–3.01). Lack of health insurance significantly predicted poor healthcare-seeking behaviour (AOR = 2.27; 95% CI: 1.41–3.66). Social support was independently associated with better healthcare utilisation (AOR = 0.58; 95% CI: 0.36–0.92). Self-reported chronic diseases are common among adults in Tudun Wada and are associated with adverse social and economic conditions. Findings highlight the importance of strengthening primary health care, expanding health insurance coverage, and integrating social support into chronic disease management at community level.

Keywords: Self-Report, Social Determinants of Health, Chronic Diseases, Adults, Urban Health

Introduction

Nigeria is undergoing a rapid epidemiological transition characterised by a growing burden of chronic non-communicable diseases (NCDs) alongside persistent communicable diseases. Systematic reviews and national analyses indicate that hypertension and diabetes mellitus are now among the leading contributors to morbidity and mortality in the country [1–3]. Community-based studies have further demonstrated marked urban–rural and socioeconomic gradients in exposure to NCD risk factors, with disadvantaged populations experiencing higher vulnerability [4,5].

Beyond biomedical and behavioural factors, growing evidence highlights the central role of social determinants of health (SDOH) in shaping NCD distribution. The World Health Organization (WHO) defines SDOH as the conditions in which people are born, grow, live, work, and age, and the broader systems shaping daily life [20]. These determinants operate through structural mechanisms such as income, education, and employment, as well as intermediary pathways including material circumstances, psychosocial stressors, health behaviours, and access to healthcare services.

In Nigeria, reliance on out-of-pocket health financing remains substantial and continues to exacerbate inequities in access to chronic disease care [6,16]. Empirical evidence shows that catastrophic health expenditure is common among households affected by chronic illness, particularly among low-income groups [13]. Low health insurance coverage further limits continuity of care and early detection of chronic conditions [18].

Studies conducted across different regions of Nigeria report high prevalence of hypertension, diabetes, obesity, and cardiometabolic risk factors in both urban and peri-urban settings [7,8,14,15]. In northern Nigeria specifically, social determinants such as income, education, and health literacy have been shown to influence hypertension prevalence and management [10,11]. However, few community-level studies integrate multiple SDOH domains within a single analytical framework, particularly from a primary health care perspective.

Guided by the WHO Commission on Social Determinants of Health (CSDH) framework [20], this study examined the association between selected social determinants of health and self-reported chronic diseases among adults in Tudun Wada, Zaria. The study aims to generate evidence relevant to strengthening primary health care and family medicine responses to chronic disease management in similar Nigerian communities.

Methodology

A descriptive cross-sectional design was employed. While this design does not permit causal inference, it is appropriate for estimating disease prevalence and exploring associations between SDOH and health outcomes in community settings. The study was conducted in Tudun Wada district, Zaria Local Government Area, Kaduna State, Nigeria. The area is characterised by mixed residential patterns, variable income levels, and differential access to healthcare facilities. The study population comprised adults aged ≥ 18 years who had resided in Tudun Wada for at least six months prior to the survey. Sample size was calculated using Cochran's formula for prevalence studies:

$$n = Z^2pq / d^2$$

Assuming a prevalence (p) of 50% due to limited local estimates, $Z = 1.96$ at 95% confidence, and precision (d) of 5%, the minimum sample size was 384. A total of 385 respondents were recruited. A multistage sampling technique was used: 1. Two wards were selected by simple random sampling. 2. Enumeration areas within wards were selected systematically. 3. Households were selected using systematic sampling based on household listings. 4. One eligible adult per

household was selected using simple random sampling. Data were collected using an interviewer-administered questionnaire adapted from WHO STEPS and validated SDOH instruments. Chronic diseases were defined as self-reported prior diagnosis by a health professional (e.g., hypertension, diabetes, cardiovascular disease). No clinical measurements were performed. The following is Variable Mapping to WHO CSDH Framework:

Structural determinants: income, education, employment status, marital status.

Intermediary determinants: housing conditions, neighbourhood environment, social support, health insurance, access to healthcare.

Outcome variables: self-reported chronic disease status; healthcare-seeking behaviour.

Data were analysed using SPSS version 30. Descriptive statistics summarised respondent characteristics. Bivariate associations were tested using chi-square analysis. Variables significant at $p < 0.20$ were entered into multivariable logistic regression models to identify independent predictors of chronic disease and healthcare-seeking behaviour. Results are reported as adjusted odds ratios (AOR) with 95% CI. Ethical approval was obtained from the relevant institutional ethics committee. Written informed consent was obtained from all participants.

Results

Table 1: Socio-Demographic Characteristics of Study Respondents

VARIABLE	Freq (%) N= 385
Age grp	
18-24	40(10.4)
25-34	65(16.9)
35-44	69(17.9)
45-54	52(13.5)
55-64	64(16.6)
>64	95(24.7)
Mean	
Sex	
Male	175(45.5)
Female	210(54.5)
Ethnicity	
Hausa	102(26.5)
Fulani	75(19.5)
Kanuri	43(11.2)
Yoruba	54(14.0)
Igbo	68(17.7)
Others	43(11.2)
Marital status	
Single	124(32.2)
Married	89(23.1)
Divorced	78(20.3)
Widowed	94(20.8)
Level of education	
Nonformal	94(24.4)
Primary	114(29.6)

Secondary	97(25.2)
Tertiary	80(20.8)
Regular employment	
Yes	146(37.9)
No	239(62.1)

Table 2: Selected Social Determinants of Health Among Study Respondents (Source: Author, 2025)

VARIABLE	Freq (%) N= 385
Household income	
<N20,000	132(34.3)
N20,000-N50,000	121(31.4)
N51,000-N100,000	66(17.1)
N101,000-N200,000	58(15.1)
>N200,000	8(2.1)
Current housing situation	
Own a house	149(38.7)
Renting a house	146(37.9)
Living with family	90(23.4)
Perception of having enough money for basic needs	
Yes	272(70.6)
No	113(29.4)
Level of access to health information	
Ethnicity	
Yes	276(71.7)
No	106(27.5)
I don't know	39(0.8)
Access to health awareness programme	
Yes	185(48.1)
No	200(51.9)
Frequency of engagement in social activities	
Daily	65(16.9)
Weekly	65(16.9)
Monthly	127(33.0)
Never	128(33.2)
Access to social support to manage chronic disease	
Yes	267(69.4)
No	107(27.8)
Unsure	11(2.9)

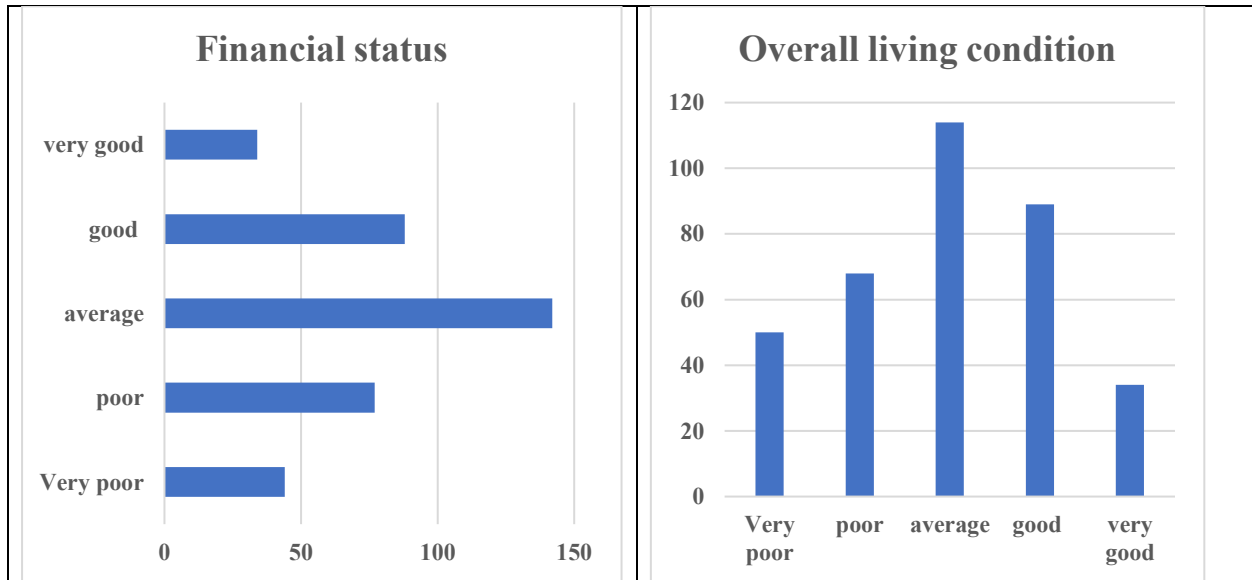


Figure 1: Perceived Financial Status and Overall Living Conditions of Study Participants (Source: Author, 2025)

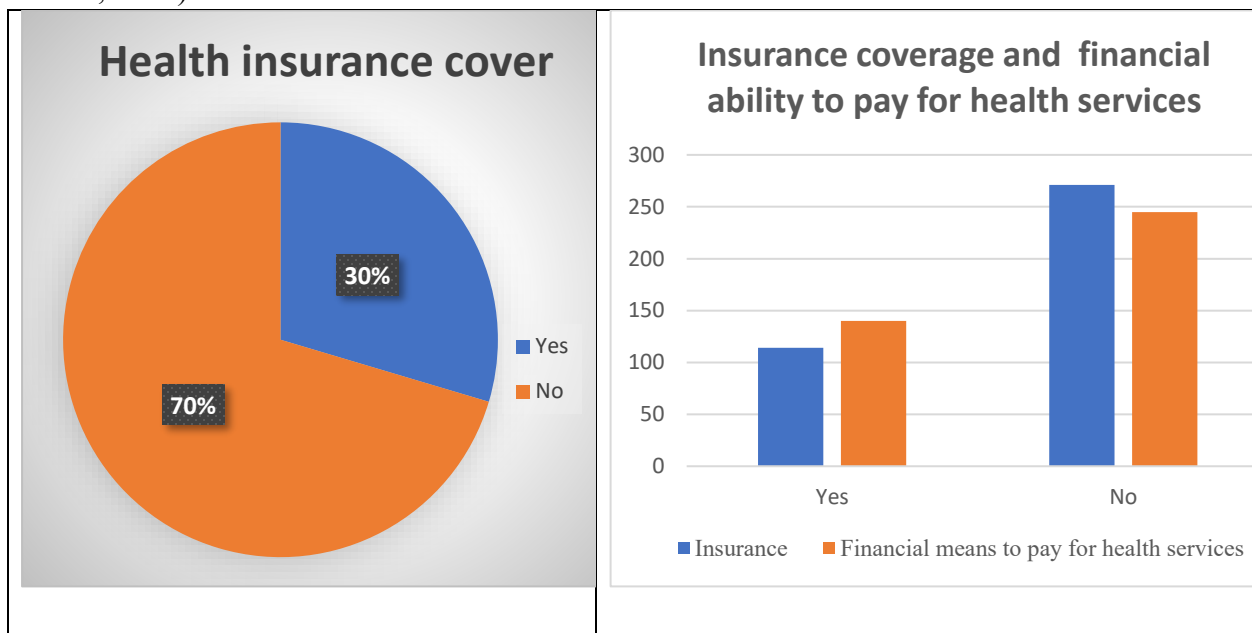


Figure 2: Comparing insurance coverage with financial ability to pay for health services (Source: Author, 2025)

Table 3: Housing and Neighbourhood Environmental Factors Affecting Health (Source: Author, 2025)

Variable	Freq (%)
Access to neighborhood public health facilities	179 (46.5)
Neighborhood with safe physical facilities	195 (50.6)
Access to affordable healthcare services	184 (47.8)
Perceived barriers in assessing healthcare	179 (46.5)

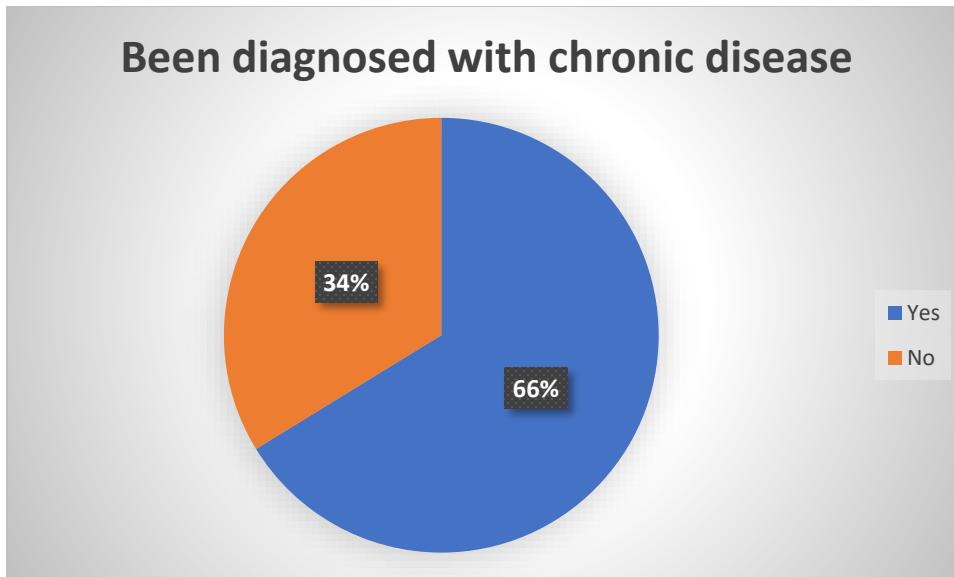


Figure 3: Proportion of Respondents with Chronic Diseases (Source: Author, 2025)

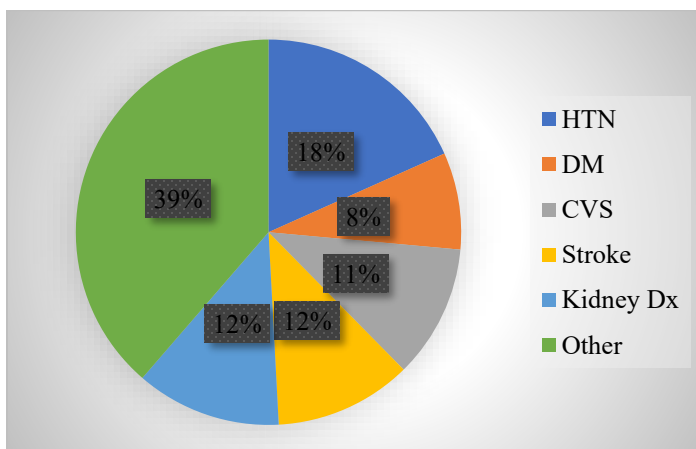


Figure 4: Types of Diseases Prevalent among Study Respondents (Source: Author, 2025)

Table 4: Factors Associated with Presence of Chronic Disease Among Respondents (Source: Author, 2025)

Variable	Diagnosed with chronic disease		x ²	P- value
	Yes Freq (%) n=	No Freq (%) n=		
Sex				
Male	126(72.0)	49(28.0)	0.029	4.770
Female	129(61.4)	81(38.6)		
Marital status			0.483	2.460
Single	86(69.4)	38(30.6)		
Married	60(67.4)	29(32.6)		
Divorced	46(59.0)	32(41.0)		
Widowed	63(67.0)	31(33.0)		
Level of education			0.809	0.968
None	62(66.0)	32(34.0)		
Primary	79(69.3)	35(30.7)		
Secondary	61(62.9)	36(37.1)		
Tertiary	53(66.3)	27(33.8)		
Household income			0.850	1.366
<20,000	89(67.4)	43(32.6)		
20,000-50,000	82(67.8)	39(32.2)		
51,000-100,000	42(63.6)	24(36.4)		
101,000-200,000	38(65.5)	20(34.5)		
>200,000	4(50.0)	4(50.0)		

Table 5: Factors Associated with Health Seeking Behaviour of Respondents (Source: Author, 2025)

Variable	Diagnosed with chronic disease		x ²	P- value
	Yes Freq (%) n=	No Freq (%) n=		
Access to health care facilities			0.66	0.278
Yes	121(67.6)	58(32.4)		
No	134(65.0)	72(35.0)		
Neighborhood safe physical facilities			1.355	0.508
Yes	131(67.2)	64(32.8)		
No	113(64.2)	63(35.8)		
Unsure	11(78.6)	3(21.4)		
How often health care workers are visited			3.581 [#]	
Regularly	112(70.9)	48(29.1)		
Occasionally	113(63.8)	64(36.2)		
Rarely	29(59.2)	20(40.8)		

Never	1(100)	0		
Have access to affordable health care				
Yes	130(70.7)	54(29.3)	0.085	3.076
No	125(66.2)	76(37.8)		
Having social support to manage chronic illness				
Yes	178(66.7)	89(33.3)	0.706	0.695
No	6(54.5)	5(45.5)		
Have emotional support to manage health conditions				
Yes	164(65.6)	86(34.4)	0.720	0.128
No	91(67.4)	44(32.6)		

Table 6: Study Participants’ Recommendations on Reducing Burden of Chronic Diseases (Source: Author, 2025)

Variable	Freq (%)
improve access to healthcare	60(15.6)
promote healthier lifestyle	226(58.7)
financial support provision	60(15.6)
increase awareness on chronic dxs	39(10.1)

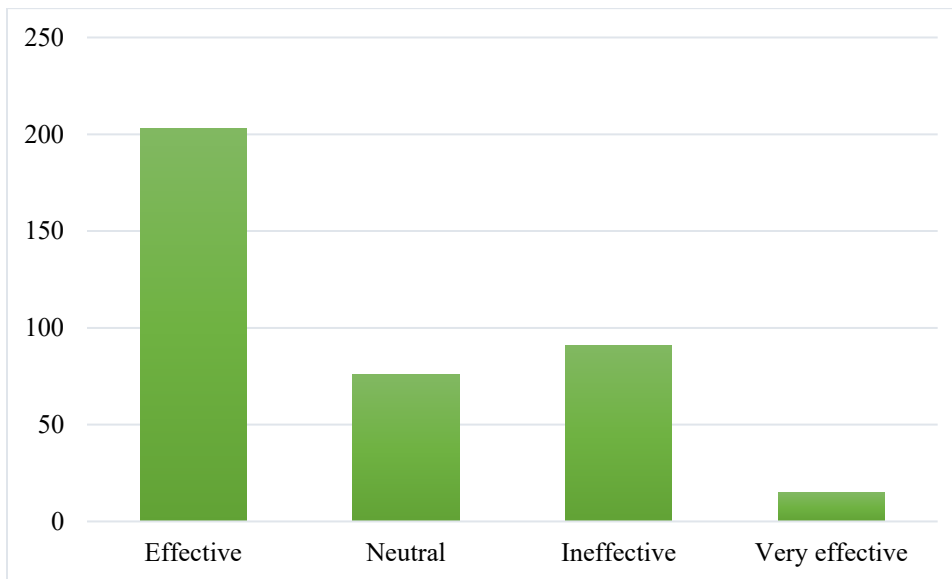


Figure 5: Rating of effectiveness of local health interventions or programs in preventing or managing chronic diseases (Source: Author, 2025)

Table 7: Study Participants' Perception on Expected Govt. Policies to Prevent Chronic Diseases (Source: Author, 2025)

VARIABLE	Freq (%)
Increased access to healthcare	82(21.3)
Health education and awareness campaigns	2(0.5)
Improved living conditions	151(39.2)
More social support programs	150(39.0)

Sociodemographic Characteristics

The mean age of respondents was 43.6 ± 12.8 years; 54.5% were female. Over one-third (34.3%) earned less than ₦20,000 monthly, and approximately 70% lacked any form of health insurance.

Prevalence of Self-Reported Chronic Diseases

Overall, 66.0% of respondents reported at least one chronic disease. Hypertension (18.0%), cardiovascular diseases (11.0%), and diabetes mellitus (8.0%) were the most frequently reported conditions.

Multivariable Logistic Regression: Predictors of Self-Reported Chronic Disease

Outcome variable: Presence of at least one self-reported chronic disease (Yes/No)

Predictor Variable	AOR	95% CI	p-value
Age ≥ 45 years	2.31	1.45–3.69	<0.001
Female sex	1.28	0.82–2.01	0.281
Monthly income < ₦20,000	1.84	1.12–3.01	0.016
No formal/primary education	1.33	0.79–2.22	0.287
Unemployed	1.41	0.88–2.27	0.152
Lack of health insurance	1.67	1.03–2.72	0.038

Variables entered into the model were selected based on bivariate analysis ($p < 0.20$). The model demonstrated acceptable goodness-of-fit.

Multivariable Logistic Regression: Predictors of Poor Healthcare-Seeking Behaviour

Outcome variable: Poor healthcare-seeking behaviour (infrequent or no formal healthcare use)

Predictor Variable	AOR	95% CI	p-value
No health insurance	2.27	1.41–3.66	0.001
Perceived unaffordable healthcare	1.96	1.21–3.18	0.006
Low income (< ₦20,000)	1.72	1.05–2.83	0.032
Lack of social support	1.74	1.08–2.80	0.023
Distance to facility >30 minutes	1.51	0.93–2.46	0.094

Social support retained an independent protective effect against poor healthcare utilisation after adjustment.

Discussion of Findings

This community-based study, guided by the WHO Commission on Social Determinants of Health framework [20], demonstrates that self-reported chronic diseases in Tudun Wada are socially patterned and associated with socioeconomic disadvantage and access to primary healthcare services. These findings align with national and sub-national Nigerian evidence showing that NCD burden is unevenly distributed across social and economic groups [4,7,9].

The high prevalence of self-reported chronic diseases observed in this study is consistent with reports from other Nigerian community-based studies, particularly in urban and peri-urban

settings [14,15]. However, this estimate should be interpreted cautiously, as reliance on self-reported diagnoses may overestimate true prevalence. Similar methodological limitations have been acknowledged in national and regional NCD assessments [1,3,19].

Low household income emerged as a key structural determinant associated with chronic disease prevalence. This finding is consistent with evidence that socioeconomic disadvantage increases exposure to NCD risk factors and limits access to preventive and curative services [4,5,11]. From a primary health care perspective, financial constraints may delay presentation, reduce follow-up, and compromise long-term disease control.

Health insurance coverage was a significant predictor of healthcare-seeking behaviour. Respondents without insurance were more likely to under utilise formal healthcare services, reinforcing concerns regarding Nigeria's heavy dependence on out-of-pocket health expenditure [6,16]. Previous studies have demonstrated that lack of financial risk protection contributes to catastrophic health spending and poor chronic disease outcomes [13,18]. Strengthening social and community-based health insurance schemes may therefore improve continuity of care within primary health care settings.

Social support demonstrated a protective effect on healthcare utilisation. This finding aligns with Nigerian and regional evidence indicating that family and community networks play an important role in facilitating care-seeking, treatment adherence, and coping with chronic illness [7,9]. Primary care and family medicine interventions that actively engage family members may enhance patient-centred chronic disease management.

Interpretation of these findings is limited to associations due to the cross-sectional design. Nonetheless, the results provide relevant insights for primary health care planning and underscore the importance of addressing social determinants alongside biomedical management of chronic diseases in Nigerian communities.

Implications for Primary Health Care and Family Medicine

1. Strengthening community-based screening and follow-up for chronic diseases within primary health care facilities.
2. Expanding enrolment in social and community-based health insurance schemes to reduce financial barriers to care.
3. Integrating family and social support structures into chronic disease counselling and management.

Conclusion

Self-reported chronic diseases are common among adults in Tudun Wada, Zaria, and are associated with socioeconomic disadvantage, lack of health insurance, and limited access to affordable healthcare. While causality cannot be inferred, the findings highlight critical areas where primary health care and family medicine interventions can improve chronic disease management.

Recommendations

- i. Expansion of affordable health insurance coverage in urban communities.
- ii. Strengthening of community-level primary healthcare services.
- iii. Integration of social support mechanisms into chronic disease programmes.

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