

Factors Influencing Management of Non-Communicable Diseases Among Patients Under Therapeutic Care Within Hospitals in the Techiman Municipality: A Cross-sectional Study

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Abstract

Background

Non-communicable diseases (NCDs) such as hypertension and diabetes are on the rise in Ghana, particularly in Techiman Municipality. Despite therapeutic interventions, patients often struggle with adherence, influenced by socio-demographic, social, and health system factors. This study examined the factors influencing the management of non-communicable diseases among patients under therapeutic care within hospitals in the Techiman Municipality, Ghana.

Method

A hospital-based cross-sectional study was conducted among 267 patients receiving therapeutic care in five selected hospitals. Data were collected through structured questionnaires and analysed using SPSS version 22.0. Descriptive statistics, chi-square and binary logistic regression were used to determine associations between demographic, social, and health system factors and NCD management.

Results

Most respondents were female (61.8%) and aged 61–75 years (38.6%). While over 90% found medication instructions easy to follow, only 20.2% adhered to a low-salt diet. Adherence was significantly associated with age, gender, and education. For instance, older patients (61–75 years) were 22 times more likely to adhere to medications [AOR = 22.29, $p = 0.005$]. Family support, stigma, and peer influence also significantly affected adherence. Additionally, health system factors such as health education ($\chi^2=10.5$, $p = 0.001$) and accessibility of care ($\chi^2=13.4$, $p = 0.000$) had strong associations with NCD management. Patients who received health education were nearly 4 times more likely to adhere to treatment [AOR = 3.7, $p = 0.004$].

Conclusion

Therapeutic management of NCDs in Techiman is shaped by demographic characteristics, social influences, and the strength of the health system. Despite high medication use, lifestyle adherence remains low. To enhance NCD management, the study recommends improving patient education, strengthening family and social support systems, and increasing access to affordable healthcare services tailored to patient demographics and needs.

INTRODUCTION

Non-communicable diseases (NCDs) are now the leading cause of death globally, accounting for over 41 million deaths each year, including approximately 17.9 million deaths from cardiovascular diseases

alone [1]. Non-communicable diseases (NCDs) are long-term health conditions that are not contagious but account for a significant proportion of global mortality and morbidity [2]. These include cardiovascular diseases, diabetes, cancer, and chronic respiratory conditions, which are largely influenced by behavioural, environmental, and genetic factors [3]. Unlike infectious diseases, NCDs require long-term care and self-management strategies, making their control highly dependent on sustained therapeutic care and patient adherence to medical guidance [1].

In low- and middle-income countries (LMICs) such as Ghana, NCDs are emerging as dominant public health concerns, gradually overtaking infectious diseases in terms of disease burden [4]. According to WHO (2024), approximately 77% of all NCD-related deaths occur in LMICs, with around 85% of premature NCD deaths occurring before the age of 70. Sub-Saharan Africa is experiencing a double burden of disease where healthcare systems, traditionally focused on communicable diseases, are now strained by the demands of chronic NCD management [5].

The situation in Ghana, especially in regions like the Bono East, is alarming. Reports from the Ghana Health Service and recent surveys show a worrying rise in hypertension and diabetes, which now contribute significantly to the country's disease burden. Hypertension affects about one in five adults, with cases rising by over 11% between 2018 and 2022, while diabetes affects 3–8% of the population and is likely underdiagnosed. Local data, such as from Ga Mashie in Greater Accra, indicate even higher combined rates of hypertension, diabetes, and obesity, highlighting a growing national public health concern [6, 7]. Contributing factors include urbanization, dietary changes, sedentary lifestyles, tobacco use, and alcohol consumption.

In the Techiman Municipality, the rising prevalence of hypertension, stroke, and diabetes places increasing pressure on hospitals and healthcare provider [8]. Although therapeutic care consisting of medication adherence, lifestyle modifications, and routine follow-up is central to effective NCD management, many patients struggle to comply with these treatment protocols [9]. This non-adherence is driven by a range of factors including financial hardship, limited health literacy, cultural perceptions of illness, and weak patient-provider communication. As a result, many patients experience poor disease outcomes, frequent hospitalizations, and increased risk of premature death [9].

Despite the growing burden of NCDs in Techiman, there is little or no localized research examining the factors that hinder effective management of these conditions. Thus, there is an urgent need to investigate the perceptions, social influences, and systemic factors that shape the therapeutic care experience of patients with NCDs in the Techiman Municipality. This study seeks to fill this gap and contribute to more responsive and effective healthcare interventions for NCD management at the municipal level.

METHOD

Study Design

This study adopted a hospital-based cross-sectional design to examine the factors that influence the management of non-communicable diseases (NCDs) among patients receiving therapeutic care within selected hospitals in the Techiman Municipality. The study was conducted over an eleven-month period, from August 2024 to July 2025, to capture a diverse range of participants and minimize potential bias associated with the sampling technique.

The study adopted a positivist perspective, which acknowledges that patient perceptions and behavioural responses can be measured objectively through structured questionnaires, producing quantifiable data suitable for statistical analysis.

Participants included in this study were adults aged 18 years and above who had been medically diagnosed with one or more non-communicable diseases (NCDs), such as hypertension, diabetes, cardiovascular diseases (including stroke and heart disease), or obesity.

The study excluded patients with severe mental health disorders that could impair their capacity to comprehend the study purpose or provide informed consent, such as those experiencing psychosis or severe depression. Additionally, patients who were unable to participate due to significant physical, cognitive, or communication impairments such as advanced dementia or language barriers were not included in the study to ensure accurate data collection and ethical engagement.

Sampling Techniques

A multi-stage sampling technique was employed. In the first stage, proportionate stratified sampling was used to determine the number of patients selected from each hospital based on the estimated patient load. Finally, simple random sampling was used to select eligible participants from outpatient and chronic care departments within each hospital to ensure every patient had an equal chance of being included in the study. The study focused specifically on individuals who had been diagnosed with cardiovascular diseases (including hypertension, and stroke) or diabetes and had been actively receiving therapeutic care for a period not exceeding two years.

Data Collection Tool(s)

A structured questionnaire was developed and sectioned into five: Socio-demographic characteristics, Perceptions of therapeutic care and treatment compliance, social support and health-seeking behaviour, health system-related factors (access, communication, affordability) and an open-ended question to allow respondents to express personal views and experiences. Most items used closed-ended Likert-scale responses, while others employed dichotomous (yes/no) and multiple-choice formats to facilitate quantitative analysis.

The items are adapted from the General Medication Adherence Scale (GMAS) [10]. Each item can be rated on a 5-point Likert scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral 4 = agree; 5 = Strongly

Agree. Data were collected using a structured, interviewer-administered questionnaire designed to assess patient perceptions, social factors, and health system influences on NCD management.

In ensuring content and face validity, the questionnaire was reviewed by experts in public health, epidemiology, and chronic disease management. Feedback from the experts was used to revise ambiguous or overlapping items to improve clarity and relevance.

A pilot study was conducted with 30 patients from a hospital outside the study sample but within the Bono East Region. The pilot test allowed for the identification and correction of inconsistencies in the tool. Reliability testing using Cronbach’s alpha yielded a value of 0.81, indicating good internal consistency for the scale items.

Statistical Analysis

The data analysis involved both descriptive and inferential statistical approaches. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the socio-demographic characteristics of the respondents and their perceptions of non-communicable disease (NCD) management.

Chi-square tests were employed to explore associations between categorical variables such as gender, education level, and perceptions of therapeutic care. Furthermore, binary logistic regression analysis was conducted to identify and quantify the influence of social and health system factors on the management of NCDs, controlling for potential confounding variables such as age, income, and healthcare access. A p-value less than 0.05 was considered statistically significant, and all statistical tests were performed at a 95% confidence level.

In summary, descriptive statistics were used for the objective 1 and three whiles chi-square test and binary logistic regression were used for the objective 3

RESULTS

Demographic Characteristics of Participants

In Table 1, majority (61.8%) of participants were female, 38.6% were aged between 61 to 75 years, 45.3% had pre-tertiary education and majority (50.9%) were married.

Table 1
Sociodemographic Characteristics of Respondents

Demographic Characteristics	Frequency (N = 267)	Percentage %
Gender		
Male	102	38.2
Female	165	61.8
Age range in years		
20–49	74	27.7
50–60	90	33.7
61–75	103	38.6
Educational level		
No formal education	34	12.7
Pre-tertiary education	121	45.3
Tertiary education	112	41.9
Marital status		
Single/divorce	77	28.8
Married	136	50.9
Widowed/widower	54	20.2

(Data Source: Field Survey, 2025)

Perceptions of Patients Receiving Therapeutic Interventions on the Management of Non-Communicable Diseases (NCDs)

In Table 2, the majority (50.6%) of respondents agreed that the medications prescribed are the most effective treatment for their condition ($p < 0.001$). Most participants (60.3%) agreed that they fully understand the purpose of each medication, while 50.3% strongly agreed that they adhere strictly to their prescriptions ($p < 0.001$). A greater proportion (60.3%) strongly agreed that their medications are safe, and most (90.3%) strongly agreed that the instructions for their medication are easy to follow ($p < 0.001$). Additionally, 59.9% strongly agreed that they feel comfortable asking their healthcare provider questions, and the majority (69.7%) strongly agreed that their medications are regularly reviewed to ensure appropriateness ($p < 0.001$).

Table 2
Perceptions of Therapeutic Interventions for NCD Management

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
My prescribed Medications are the most effective treatment	26 (9.7)	135 (50.6)	53 (19.9)	53 (19.9)	0 (0.00)	0.000
I fully understand the purpose of each medication	27 (10.1)	161 (60.3)	0 (0.00)	53 (19.9)	26 (9.7)	0.000
I adhere strictly to my prescriptions for medications	134 (50.3)	107 (40.1)	0 (0.00)	26 (9.7)	0 (0.00)	0.000
I feel confident that my medications are safe for me.	161 (60.3)	106 (39.7)	0 (0.00)	0 (0.00)	0 (0.00)	0.001
The instructions for my medication are easy to follow	241 (90.3)	0 (0.00)	0 (0.00)	26 (9.7)	0 (0.00)	0.000
I'm comfortable asking healthcare provider questions	160 (59.9)	81 (30.3)	0 (0.00)	26 (9.7)	0 (0.00)	0.000
My healthcare provider regularly reviews my medications	186 (69.7)	54 (20.2)	27 (10.1)	0 (0.00)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

As shown in Table 3, the majority (50.2%) of respondents agreed that they are actively working towards maintaining a healthy weight ($p < 0.001$). Most participants (59.9%) agreed that they avoid foods high in saturated fats, and another 59.9% agreed that they limit their consumption of sugary beverages and snacks ($p < 0.001$). However, only 20.2% agreed to consistently following a diet low in salt to manage hypertension, while 30.0% strongly disagreed ($p < 0.001$). A majority (50.6%) agreed that they prefer fresh or unprocessed foods to control sodium intake, and 60.3% strongly agreed that they engage in regular physical exercise ($p < 0.001$). Similarly, 60.3% agreed that they limit their alcohol intake in accordance with recommended guidelines ($p < 0.001$).

Table 3
Adoption of Lifestyle Modification Interventions

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
Actively working towards maintaining a healthy weight	106 (39.7)	134 (50.2)	0 (0.00)	27 (10.1)	0 (0.00)	0.000
I avoid foods high in saturated fats	107 (40.1)	160 (59.9)	0 (0.00)	0 (0.00)	0 (0.00)	0.001
I limit my consumption of sugary beverages and snacks	54 (19.9)	160 (59.9)	53 (19.9)	0 (0.00)	0 (0.00)	0.000
I consistently follow a diet low in salt	53 (19.9)	54 (20.2)	54 (20.2)	26 (9.7)	80 (30.0)	0.000
I prefer unprocessed foods to control my sodium intake	79 (29.6)	135 (50.6)	26 (9.7)	27 (10.1)	0 (0.00)	0.000
I engage in physical exercise for at least 30 minutes daily	161 (60.3)	53 (19.9)	27 (10.1)	26 (9.7)	0 (0.00)	0.000
I limit my alcohol intake according to recommendation	53 (19.9)	161 (60.3)	53 (19.9)	0 (0.00)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

As shown in Table 4, most respondents (39.7%) agreed that the psychological support they receive has helped them manage their health ($p < 0.001$). The majority (49.8%) strongly agreed that behavioural interventions have positively impacted their daily routines, while 30.0% agreed that behavioural support increased their confidence in managing their health ($p < 0.001$). A higher proportion (59.6%) strongly agreed that coping strategies learned in therapy are effective, and 47.9% agreed they are comfortable discussing emotions with a counsellor ($p < 0.001$). Most participants (58.8%) agreed that the frequency of their psychological support sessions is sufficient, and 46.8% agreed that their mental health has significantly improved due to ongoing behavioral support ($p < 0.001$).

Table 4
Influence of Behavioral and Psychological Support on NCD Management

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
Psychological support has helped me manage my health	54 (20.2)	106 (39.7)	27 (10.1)	80 (30.0)	0 (0.00)	0.000
Behavioural interventions have positively impacted my daily routines	133 (49.8)	107 (40.1)	27 (10.1)	0 (0.00)	0 (0.00)	0.000
Confident in managing my health after receiving behavioural support	53 (19.9)	80 (30.0)	80 (30.0)	27 (10.1)	27 (10.1)	0.000
The coping strategies I've learned in therapy have been effective in managing my mental health	159 (59.6)	81 (30.3)	27 (10.1)	0 (0.00)	0 (0.00)	0.000
comfortable discussing my emotions and concerns with my therapist	57 (21.3)	128 (47.9)	36 (13.5)	46 (17.2)	0 (0.00)	0.000
The frequency of my psychological support sessions is sufficient to meet my needs	54 (20.2)	157 (58.8)	0 (0.00)	36 (13.5)	20 (7.5)	0.000
My mental health has improved due to the ongoing behavioral support I receive	103 (38.6)	125 (46.8)	19 (7.1)	20 (7.5)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

Table 5 explores the association between demographic characteristics and patients' trust in pharmacological interventions for managing non-communicable diseases (NCDs). Age and education level showed significant associations. Patients aged 20–49 years were 54% less likely to trust their medications compared to those aged 50 and above [AOR = 0.46 (0.225–0.926), $p = 0.030$]. Additionally, patients with no formal education were over 3 times more likely to trust their medications compared to those with tertiary education [AOR = 3.48 (1.308–9.240), $p = 0.012$].

Table 5

Association Between Demographic Characteristics and Trust in Receiving Therapeutic Interventions for NCD Management

Demographic Characteristics	I trust my medications are the best treatment		χ ² (P-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	61 (59.8)	41 (40.2)	0.017 (0.896)	1.58 (0.889, 2.795) 0.120
Female	100 (60.6)	65 (39.4)		Ref:
Age range in years				
20–49	56 (75.7)	18 (24.3)	17.089 (0.000)	0.46 (0.225, 0.926) 0.030
50–60	40 (44.4)	50 (55.6)		1.56 (0.820, 2.967) 0.175
61–75	65 (63.1)	38 (36.9)		Ref:
Educational level				
No formal education	15 (44.1)	19 (55.9)	11.187 (0.004)	3.48 (1.308, 9.240) 0.012
Pre-tertiary education	66 (54.5)	55 (45.5)		1.76 (0.899, 3.454) 0.099
Tertiary education	80 (71.4)	32 (28.6)		Ref:
Marital status				
Single/divorce	52 (67.5)	25 (32.5)	3.324 (0.190)	0.94 (0.423, 2.095) 0.883
Married	81 (59.6)	55 (40.4)		0.77 (0.387, 1.539) 0.462
Widowed/widower	28 (51.9)	26 (48.1)		Ref:

(Data Source: Field Data, 2025)

Table 6 explores the association between demographic factors and adherence to prescribed medications in the management of NCDs. A significant association was observed between age and medication adherence ($\chi^2=44.45$, $p = 0.000$). Patients aged 61–75 years were over 22 times more likely to adhere to their prescribed medications compared to those aged 20–49 years [AOR = 22.29 (2.5–199.0), $p = 0.005$].

Table 6
Association Between Demographic Characteristics and Adherence to Prescribed Medications in NCD Management

Demographic Characteristics	I take my medications as prescribed		X ² (P-value)	AOR (95% CI) P-value
	Yes, I strictly (%)	No, not strictly (%)		
Gender				
Male	100 (98.0)	2 (2.0)	11.358 (0.001)	Ref:
Female	141 (85.5)	24 (14.5)		0.31 (0.058, 1.692) 0.177
Age range in years				
20–49	74 (100.0)	0 (0.0)	44.450 (0.000)	Ref:
50–60	66 (73.3)	24 (26.7)		NA
61–75	101 (98.1)	2 (1.9)		22.29 (2.5, 199.0) 0.005
Educational level				
No formal education	25 (73.5)	9 (26.5)	25.473 (0.000)	Ref:
Pre-tertiary education	104 (86.0)	17 (14.0)		NA
Tertiary education	112 (100.0)	0 (0.0)		NA
Marital status				
Single/divorce	77 (100.0)	0 (0.0)	27.746 (0.000)	Ref:
Married	110 (80.9)	26 (19.1)		NA
Widowed/widower	54 (100.0)	0 (0.0)		NA

(Data Source: Field Data, 2025)

Table 7 presents the association between demographic characteristics and dietary sugar reduction in the management of non-communicable diseases. Age and marital status showed statistically significant associations with sugar reduction behavior. Participants aged 61–75 years were about 89 times more likely to avoid excess sugar compared to those aged 50–60 years [AOR = 88.8 (11.77–670.6), $p = 0.000$]. Additionally, widowed/widower patients were 97% less likely to avoid excess sugar compared to single/divorced individuals [AOR = 0.03 (0.004–0.191), $p = 0.000$].

Table 7

Association Between Demographic Characteristics and Dietary Sugar Reduction in NCD Management

Demographic Characteristics	I avoid excess sugar in drinks and snacks		χ ² (p-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	83 (81.4)	19 (18.6)	0.155 (0.694)	Ref:
Female	131 (79.4)	34 (20.6)		2.54 (0.619, 10.44) 0.196
Age range in years				
20–49	74 (100.0)	0 (0.0)	115.8 (0.000)	Ref:
50–60	39 (43.3)	51 (56.7)		NA
61–75	101 (98.1)	2 (1.9)		88.8 (11.77, 670.6) 0.000
Educational level				
No formal education	24 (70.6)	10 (29.4)	48.41 (0.000)	Ref:
Pre-tertiary education	78 (64.5)	43 (35.5)		NA
Tertiary education	122 (100.0)	0 (0.0)		NA
Marital status				
Single/divorce	77 (100.0)	0 (0.0)	46.25 (0.000)	Ref:
Married	109 (80.1)	27 (19.9)		NA
Widowed/widower	28 (51.9)	26 (48.1)		0.03 (0.004, 0.191) 0.000

(Data Source: Field Data, 2025)

Table 8 presents the association between demographic characteristics and adherence to a low-salt diet for hypertension management. A significant association was found between gender and adherence ($\chi^2=48.6$, $p = 0.000$); females were 96% less likely to follow a low-salt diet compared to males [AOR = 0.04 (0.017–0.104), $p = 0.000$]. Age also showed a significant relationship ($\chi^2=63.4$, $p = 0.000$); individuals aged 50–60 was 95% less likely to adhere compared to those aged 20–49 [AOR = 0.05 (0.019–0.128), $p = 0.000$]. Educational level was associated with adherence ($\chi^2=18.64$, $p = 0.000$); participants with pre-tertiary education were 99% less likely to follow the diet compared to those with no

formal education [AOR = 0.01 (0.003–0.071), $p = 0.000$], while tertiary-educated participants were 86% less likely [AOR = 0.14 (0.049–0.383), $p = 0.000$]. Marital status was also significant ($\chi^2=3.499$, $p = 0.042$); married individuals were nearly five times more likely to adhere to the diet [AOR = 4.83 (1.57–14.90), $p = 0.006$], and widowed participants were over three times more likely compared to singles/divorced [AOR = 3.37 (1.34–8.48), $p = 0.010$].

Table 8
Association Between Demographic Characteristics and Adherence to a Low-Salt Diet for Hypertension Management

Demographic Characteristics	I follow a low-salt diet for my hypertension		χ ² (p-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	68 (66.7)	34 (33.3)	48.6 (0.000)	Ref:
Female	39 (23.6)	126 (76.4)		0.04 (0.017, 0.104) 0.000
Age range in years				
20–49	58 (78.4)	16 (21.6)	63.4 (0.000)	Ref:
50–60	26 (28.9)	64 (71.1)		0.05 (0.019, 0.128) 0.000
61–75	23 (22.3)	80 (77.7)		2.11 (0.80, 5.577) 0.131
Educational level				
No formal education	25 (73.5)	9 (26.5)	18.64 (0.000)	Ref:
Pre-tertiary education	40 (33.1)	81 (66.9)		0.01 (0.003, 0.071) 0.000
Tertiary education	42 (37.5)	70 (62.5)		0.14 (0.049, 0.383) 0.000
Marital status				
Single/divorce	26 (33.8)	51 (66.2)	3.499 (0.042)	Ref:
Married	54 (39.7)	82 (60.3)		4.83 (1.57, 14.90) 0.006
Widowed/widower	27 (50.0)	27 (50.0)		3.37 (1.34, 8.48) 0.010

(Data Source: Field Data, 2025)

Social Factors Influencing Therapeutic Interventions of NCDs

Table 9 shows that 30.3% of respondents strongly agreed that they seek family support to reduce health complications, although an equal proportion (30.3%) disagreed ($p < 0.001$). Nearly half (49.8%) strongly agreed that their family's attitude significantly impacts their motivation to stay healthy, and 60.7% agreed that family encouragement influences adherence to therapeutic interventions ($p < 0.001$). Furthermore, 40.4% agreed they feel motivated to exercise regularly due to family support, while 50.2% strongly agreed that their family actively helps them manage their health conditions ($p < 0.001$).

Table 9
Influence of Family Support on Adherence to Therapeutic Interventions

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
I seek support from family to help me reduce my health complications	81 (30.3)	79 (29.6)	0 (0.00)	81 (30.3)	26 (9.7)	0.000
My family's attitude towards health significantly impacts my motivation to stay healthy	133 (49.8)	81 (30.3)	27 (10.1)	0 (0.00)	26 (9.7)	0.000
My family's encouragement significantly influences my adherence to therapeutic interventions	52 (19.5)	162 (60.7)	27 (10.1)	0 (0.00)	26 (9.7)	0.000
I feel motivated to exercise regularly because of support from my family.	106 (38.7)	108 (40.4)	27 (10.1)	0 (0.00)	26 (9.7)	0.000
My family actively helps me in managing my health to control my sickness.	134 (50.2)	107 (40.1)	0 (0.00)	0 (0.00)	26 (9.7)	0.000

(Data Source: Field Survey, 2025)

Table 10 reveals that social stigma negatively influences therapeutic adherence among respondents. While 20.2% of participants agreed or strongly agreed that they feel embarrassed discussing their sickness with others, a greater proportion disagreed (39.7%) or strongly disagreed (30.0%) ($p < 0.001$). Additionally, 69.7% either disagreed or strongly disagreed that stigma prevents them from joining support groups ($p < 0.001$). Nearly half (49.8%) strongly disagreed that they avoid taking medication in

public, suggesting limited influence of stigma on this behavior ($p < 0.001$). Moreover, 59.9% disagreed or strongly disagreed that fear of judgment hinders them from following medical advice ($p < 0.001$).

Table 10
Effects of Social Stigma on Therapeutic Adherence

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
I sometimes feel embarrassed to discuss my sickness with friends or colleagues	27 (10.1)	27 (10.1)	27 (10.1)	106 (39.7)	80 (30.00)	0.000
Social stigma prevents me from joining support groups or activities for hypertensive patients.	0 (0.00)	27 (10.1)	54 (20.2)	80 (30.0)	106 (39.7)	0.000
I avoid taking my blood pressure medication in public to prevent drawing attention.	27 (10.1)	27 (10.1)	27 (10.1)	53 (19.9)	133 (49.8)	0.000
Concerns about being judged by others sometimes discourage me from following my doctor's advices	27 (10.1)	27 (10.1)	53 (19.9)	81 (30.3)	79 (29.6)	0.000

(Data Source: Field Survey, 2025)

Table 11 indicates mixed responses regarding the role of peer influence in therapeutic practices. While 40.1% of participants strongly disagreed that they seek support from friends to reduce health complications, a notable 30.3% strongly agreed ($p < 0.001$). Responses were split regarding being influenced by friends' eating and exercise habits, with 39.8% agreeing or strongly agreeing and 60.3% disagreeing or strongly disagreeing ($p < 0.001$). Social challenges also emerged, as 30.3% found it difficult to maintain a healthy lifestyle around peers who do not, while 49.9% disagreed or strongly disagreed ($p < 0.001$). Regarding friends' positive health attitudes, responses were divided, with 40.1% agreeing or strongly agreeing and 30.3% strongly disagreeing ($p = 0.014$). Notably, 70.4% reported being more likely to adhere to their health management plan when peers do the same ($p < 0.001$).

Table 11
Peer Influence on Therapeutic Practices and Health Behaviour

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
I seek support from friends to help me reduce my health complications	81 (30.3)	26 (9.7)	26 (9.7)	27 (10.1)	107 (40.1)	0.000
I am influenced by my friends' eating and exercise habits in managing my sickness	53 (19.9)	53 (19.9)	0 (0.00)	108 (40.4)	53 (19.9)	0.000
I find it difficult to maintain a healthy lifestyle when socializing with peers who do not.	27 (10.1)	54 (20.2)	53 (19.9)	80 (30.0)	53 (19.9)	0.000
My friends' attitudes towards health positively impact my own health behaviors.	53 (19.9)	54 (20.2)	79 (29.6)	0 (0.00)	81 (30.3)	0.014
I am more likely to follow my health management plan when I have peers who do the same	107 (40.1)	81 (30.3)	26 (9.7)	27 (10.1)	26 (9.7)	0.000

(Data Source: Field Survey, 2025)

As shown in Table 12, responses were varied regarding the impact of social norms on compliance with therapeutic interventions. About 29.6% of participants strongly agreed that societal expectations make it difficult to follow their health management plan, while 30.0% disagreed or strongly disagreed ($p < 0.001$). Additionally, 40.0% agreed or strongly agreed that there is a general lack of awareness about the importance of therapeutic changes, whereas 50.2% disagreed or strongly disagreed ($p < 0.001$). A total of 30.3% felt societal pressure to engage in unhealthy behaviors, while 59.9% rejected this notion ($p < 0.001$). Interestingly, 49.9% indicated that public health messages in their community positively influenced their choices related to therapeutic interventions, though 19.9% strongly disagreed ($p = 0.010$).

Table 12
Influence of Social Norms on Therapeutic Intervention Compliance

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
Societal expectations exercise makes it challenging to adhere to my health management plan.	79 (29.6)	0 (0.00)	108 (40.1)	53 (19.9)	27 (10.1)	0.000
There is a general lack of awareness about the importance of therapeutic changes in managing the sickness	53 (19.9)	27 (10.1)	53 (19.9)	80 (30.0)	54 (20.2)	0.000
I feel societal pressure to engage in behaviors that are not conducive to managing my sickness	27 (10.1)	54 (20.2)	26 (9.7)	133 (49.8)	27 (10.1)	0.000
Public health messages in my community positively influence my choices related to therapeutic interventions.	80 (30.0)	53 (19.9)	81 (30.3)	0 (0.00)	53 (19.9)	0.010

(Data Source: Field Survey, 2025)

Table 13 presents the association between demographic characteristics and the utilization of family support in managing non-communicable diseases (NCDs) among patients. A significant association was observed between age and family support utilization ($\chi^2=15.45$, $p = 0.000$). Patients aged 61–75 years were 4 times more likely to seek family support compared to those aged 20–49 years [AOR = 4.06 (1.743–9.440), $p = 0.001$]. Educational level was also significantly associated with family support use ($\chi^2=8.94$, $p = 0.011$); patients with pre-tertiary education were 91% less likely to seek family support compared to those with no formal education [AOR = 0.09 (0.028–0.266), $p = 0.000$], and those with tertiary education were 65% less likely [AOR = 0.35 (0.149–0.802), $p = 0.013$]. Marital status showed a strong association ($\chi^2=69.58$, $p = 0.000$); married patients were 99% less likely to seek family support [AOR = 0.01 (0.001–0.074), $p = 0.000$], while widowed/widower patients were over twice as likely to seek support compared to single/divorced individuals [AOR = 2.25 (1.107–4.574), $p = 0.025$].

Table 13

Association Between Demographic Variables and Utilization of Family Support in NCD Management

Demographic Characteristics	I seek family support for my health		χ ² (P-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	58 (56.9)	44 (43.1)	0.65 (0.422)	Ref:
Female	102 (61.8)	63 (38.2)		1.46 (0.752, 2.835) 0.264
Age range in years				
20–49	56 (75.7)	18 (24.3)	15.45 (0.000)	Ref:
50–60	41 (45.6)	49 (54.4)		0.98 (0.415, 2.291) 0.955
61–75	63 (61.2)	40 (38.8)		4.06 (1.743, 9.440) 0.001
Educational level				
No formal education	25 (73.5)	9 (26.5)	8.94 (0.011)	Ref:
Pre-tertiary education	61 (50.4)	60 (49.6)		0.09 (0.028, 0.266) 0.000
Tertiary education	74 (66.1)	38 (33.9)		0.35 (0.149, 0.802) 0.013
Marital status				
Single/divorce	76 (98.7)	1 (1.3)	69.58 (0.000)	Ref:
Married	56 (41.2)	80 (58.8)		0.01 (0.001, 0.074) 0.000
Widowed/widower	28 (51.9)	26 (48.1)		2.25 (1.107, 4.574) 0.025

(Data Source: Field Data, 2025)

Table 14 examines the relationship between demographic factors and avoidance of treatment due to fear of judgment in NCD management. A significant association was found between gender and avoidance of treatment ($\chi^2=6.89$, $p = 0.009$). Female participants were 90% less likely to avoid treatment due to fear of judgment compared to males [AOR = 0.10 (0.024–0.453), $p = 0.003$]. Age was also

significantly associated ($\chi^2=127.5$, $p = 0.000$); individuals aged 50–60 years were 99% less likely to avoid treatment compared to those aged 20–49 years [AOR = 0.01 (0.002–0.058), $p = 0.000$]. Furthermore, participants with tertiary education were 96% less likely to avoid treatment due to perceived judgment than those with no formal education [AOR = 0.04 (0.006–0.290), $p = 0.001$]. Lastly, married participants were 99% less likely to avoid treatment compared to those who were single or divorced [AOR = 0.01 (0.001–0.233), $p = 0.003$].

Table 14
Association Between Demographic Factors and Avoidance of Treatment Due to Perceived Judgment in NCD Management

Demographic	I sometimes avoid treatment due to fear of judgment		χ ² (p-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	29 (28.4)	73 (71.6)	6.89 (0.009)	Ref:
Female	25 (15.2)	140 (84.8)		0.10 (0.024, 0.453) 0.003
Age range in years				
20–49	48 (64.9)	26 (35.1)	127.5 (0.000)	Ref:
50–60	0 (0.0)	90 (100.0)		0.01 (0.002, 0.058) 0.000
61–75	6 (5.8)	97 (94.2)		NA
Educational level				
No formal education	15 (44.1)	19 (55.9)	17.95 (0.000)	Ref:
Pre-tertiary education	14 (11.6)	107 (88.4)		NA
Tertiary education	25 (22.3)	87 (77.7)		0.04 (0.006, 0.290) 0.001
Marital status				
Single/divorce	26 (33.8)	51 (66.2)	20.06 (0.000)	Ref:
Married	27 (19.9)	109 (80.1)		0.01 (0.001, 0.233) 0.003
Widowed/widower	1 (1.9)	53 (98.1)		0.12 (0.007, 1.557) 0.101

(Data Source: Field Data, 2025)

Health System-Related Factors Affecting the Management of NCDs

Table 15 indicates that majority (89.9%) of participants, 70.0% strongly agree, 19.9% agreed being aware of the recommendations for adhering to therapeutic changes ($p < 0.001$). Similarly, 100% of respondents agreed or strongly agreed that the health education they receive has significantly improved their knowledge on managing their condition ($p < 0.001$). All respondents also agreed that they are well-informed about the lifestyle changes necessary to manage their sickness (70.0% strongly agree; 30.0% agree). Educational materials from healthcare facilities were considered clear and helpful by 79.8% of participants ($p < 0.001$). Additionally, 89.9% agreed or strongly agreed that health system support has helped them make dietary changes to manage their illness ($p < 0.001$).

Table 15
Impact of Health Education on Therapeutic Change Adherence

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
I am aware of the recommendations to adhere to therapeutic changes	187 (70.0)	53 (19.9)	0 (0.00)	27 (10.1)	0 (0.00)	0.000
The health education I receive has significantly increased my knowledge about managing my sickness.	188 (70.4)	79 (29.6)	0 (0.00)	0 (0.00)	0 (0.00)	0.000
I feel well-informed about the lifestyle changes needed to control my sickness	178 (70.0)	80 (30.0)	0 (0.00)	0 (0.00)	0 (0.00)	0.000
The educational materials provided by healthcare facilities are clear and helpful.	132 (49.5)	81 (30.3)	54 (20.2)	0 (0.00)	0 (0.00)	0.000
The support from the health system has made it easier for me to make dietary changes to manage my sickness.	160 (59.9)	80 (30.0)	27 (10.1)	0 (0.00)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

Table 16, shows that most respondents affirmed (89.9%), 30.0% strongly agree; 59.9% agreed regular counselling sessions have motivated them to adopt healthier lifestyles ($p < 0.001$). Similarly, 89.9% also agreed that advice given during counselling sessions is relevant and practical. When asked about the

personalization of counselling, 60% (19.9% strongly agree; 40.1% agree) acknowledged receiving tailored suggestions from their healthcare providers ($p < 0.001$). Regarding confidence in controlling their condition, 80.2% expressed confidence due to the comprehensive care received. Lastly, 89.9% indicated that counselling also addresses their mental well-being ($p < 0.001$).

Table 16
Effectiveness of Counselling Services in Health Management

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
Regular counseling sessions have motivated me to adopt healthier lifestyle	80 (30.0)	160 (59.9)	27 (10.1)	0 (0.00)	0 (0.00)	0.000
I find the advice given during counseling sessions relevant and practical for managing my sickness.	160 (59.9)	80 (30.0)	27 (10.1)	0 (0.00)	0 (0.00)	0.000
My healthcare provider offers personalized suggestions during counseling that address my specific needs.	53 (19.9)	107 (40.1)	54 (20.2)	53 (19.9)	0 (0.00)	0.000
I feel confident in my ability to control my sickness due to the comprehensive care I receive.	53 (19.9)	161 (60.3)	26 (9.7)	27 (10.1)	0 (0.00)	0.000
The counseling I receive also addresses my mental well-being in relation to health management	79 (29.6)	161 (60.3)	27 (10.1)	0 (0.00)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

Table 17 shows that accessibility to health facilities significantly enhances therapeutic adherence. Most respondents (80.1%) agreed that easy access supports health management, while 90.3% could readily consult their healthcare providers. Additionally, 90.2% reported that nearby services positively influenced healthy living. All participants agreed that scheduling check-ups was convenient. These findings were statistically significant ($p < 0.001$).

Table 17
Accessibility of Health Facilities and Its Impact on Therapeutic Adherence

Variables	Responses					P-value
	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	
Easy access to healthcare facilities has been crucial in my health management	53 (19.9)	161 (60.2)	53 (19.9)	0 (0.00)	0 (0.00)	0.000
I can readily access my healthcare provider for advice on therapeutic changes.	106 (39.7)	135 (50.6)	26 (9.7)	0 (0.00)	0 (0.00)	0.000
The proximity of healthcare services has influenced my ability to maintain a healthy lifestyle.	160 (59.9)	81 (30.3)	0 (0.00)	26 (9.7)	0 (0.00)	0.000
Scheduling appointments for regular check-ups and consultations is convenient and flexible	186 (69.7)	81 (30.3)	0 (0.00)	0 (0.00)	0 (0.00)	0.000

(Data Source: Field Survey, 2025)

Table 18 explores the association between demographic characteristics and the perceived impact of proximity to healthcare on health habits. A significant relationship was observed between age and perception of proximity's impact. Older respondents (aged 61–75 years) were over 22 times more likely to report improved health habits due to healthcare proximity compared to those aged below 61 years [AOR = 22.29 (2.50–199.0), $p = 0.005$].

Table 18

Association Between Demographic Characteristics and the Perceived Impact of Proximity to Healthcare on Health Habits

Demographic	Proximity to care improves my health habits		X ² (P-value)	AOR (95% CI) P-value
	Yes (%)	No (%)		
Gender				
Male	100 (98.0)	2 (2.0)	11.36 (0.001)	Ref:
Female	141 (85.5)	24 (14.5)		0.31 (0.058, 1.692) 0.177
Age range in years				
20–49	74 (100.0)	0 (0.0)	44.45 (0.000)	Ref:
50–60	66 (73.3)	24 (26.7)		NA
61–75	101 (98.1)	2 (1.9)		22.29 (2.50, 199.0) 0.005
Educational level				
No formal education	25 (73.5)	9 (26.5)	25.47 (0.000)	Ref:
Pre-tertiary education	104 (86.0)	17 (14.0)		NA
Tertiary education	112 (100.0)	0 (0.0)		NA
Marital status				
Single/divorce	77 (100.0)	0 (0.0)	27.75 (0.000)	Ref:
Married	110 (80.9)	26 (19.1)		NA
Widowed/widower	54 (100.0)	0 (0.0)		NA

(Data Source: Field Data, 2025)

DISCUSSION

Perceptions of Patients Receiving Therapeutic Care for Non-Communicable Diseases

The current study revealed a generally positive perception of therapeutic interventions, with most patients expressing trust in their medications. This is in line with earlier findings by several studies, that noted that medication safety and clarity of instructions improve patient adherence and confidence in treatment [11, 12]. In addition to pharmacological adherence, patients demonstrated positive lifestyle practices related to NCD management. These findings mirror the conclusions of several studies, that found that dietary choices significantly influence the management of hypertension and diabetes in Ghana [13, 14]. Psychological and behavioral support emerged as another critical dimension in patient perceptions of therapeutic care. This aligns with global evidence that psychosocial support improves self-management and emotional well-being in patients with chronic diseases [15, 16, 17]. Educational level also played a crucial role in shaping perceptions and practices related to NCD management. Interestingly, patients with no formal education were significantly more likely to trust their medications compared to those with tertiary education [AOR = 3.48 (1.308–9.240), $p = 0.012$]. These findings disagree with the assumption that higher education always correlates with better health practices and may reflect the complex interplay of trust, cultural beliefs, and health literacy in determining patient behaviours [18, 19]. The lower adherence among educated individuals could be attributed to greater exposure to conflicting health information or a sense of autonomy in treatment choices, calling for more nuanced patient education approaches [20].

Social Factors Influencing Therapeutic Interventions of NCDs

This study discovered that family support plays a significant role in improving therapeutic adherence and health outcomes. These findings are in line with previous research which has shown that social support from family can reduce psychological distress and improve self-care behaviours in patients with chronic illnesses [21, 22]. Stigma emerged as a nuanced but less dominant social factor influencing therapeutic adherence. This contrasts with earlier studies in Ghana which identified stigma as a major barrier to treatment adherence, especially for conditions perceived to carry social shame [23, 24]. Age was a key determinant in the utilization of family support, with patients aged 61–75 years being four times more likely to seek support from family members compared to those aged 20–49 years [AOR = 4.06 (1.743–9.440), $p = 0.001$]. This aligns with previous studies that suggest older adults often rely more on family networks for emotional and logistical support in managing chronic illnesses [25, 26]. Surprisingly, individuals with higher educational levels particularly those with pre-tertiary and tertiary education were significantly less likely to seek family support compared to those with no formal education [AOR = 0.09 (0.028–0.266), $p = 0.000$; AOR = 0.35 (0.149–0.802), $p = 0.013$ respectively]. This could be attributed to greater self-efficacy and autonomy in health decision-making among the more educated, or perhaps a reduced perception of the need for familial involvement [27].

Health System Factors Influencing the Management of Non-Communicable Diseases (NCDs)

Respondents strongly agreed that health education had significantly enhanced their understanding of how to manage their conditions, which highlights the impact of structured patient education programs. This finding aligns with previous studies emphasizing the essential role of health literacy and education in improving chronic disease outcomes [28, 29]. A large majority of respondents (80.1%) agreed that easy access to health services facilitated their ability to manage their conditions effectively. These findings underscore the role of geographic and logistical accessibility in promoting continuity of care, timely interventions, and patient satisfaction [30, 31]. Nearly 90% of respondents acknowledged the motivating role of regular counselling sessions in adopting healthier lifestyles. These findings are consistent with studies from Ghana and Kenya, where effective counselling was associated with improved disease self-management and psychosocial well-being [32, 33].

Conclusion

The study revealed that patients under therapeutic care for non-communicable diseases (NCDs) in hospitals within the Techiman Municipality generally had positive perceptions about their treatment. Majority demonstrated trust in the effectiveness and safety of their medications, adhered to prescriptions, and reported clear understanding of medication instructions. Most respondents also acknowledged receiving adequate behavioural and psychological support, including guidance on healthy lifestyles and emotional well-being. However, gaps were noted in adherence to dietary interventions such as low-salt intake, particularly among younger, female, and educated patients, highlighting the need for more targeted nutritional counselling.

Social factors, especially family support, significantly influenced adherence to NCD management strategies. Patients who received encouragement from family members were more likely to comply with medication, engage in physical activity, and maintain healthy routines. While social stigma and peer influence had varying impacts, most participants indicated that supportive social environments enhanced their motivation and health outcomes, particularly among older and married individuals.

Health system-related factors also played a vital role in influencing the management of NCDs. High levels of patient satisfaction were reported in relation to health education, counselling services, accessibility to care, and personalized support. Participants noted that frequent, relevant, and tailored advice from healthcare professionals improved their knowledge, motivation, and adherence to treatment plans. Accessibility of facilities and proximity to healthcare centers further encouraged healthy lifestyle adoption. These findings suggest that strengthening health education, improving access, and enhancing the quality of counselling can significantly improve therapeutic outcomes in managing NCDs.

GHS should institutionalize behavioural and psychological counselling services in all health facilities managing NCDs, as findings showed that such support significantly improves self-management and adherence among patients.

Techiman Municipal Health Directorate should initiate community-based health programs that involve family members in patient education and lifestyle counselling, as family support was shown to

significantly enhance adherence and motivation.

Further qualitative research should investigate cultural, economic, or perceptual barriers to salt-reduction practices, especially among younger and female populations.

This study primarily relied on self-reported data obtained through structured questionnaires administered to patients undergoing therapeutic care for non-communicable diseases (NCDs) in selected hospitals within the Techiman Municipality. This approach may introduce recall bias or social desirability bias, where respondents provide answers, they perceive as favourable or acceptable rather than accurate. Such biases can potentially affect the reliability of some responses. To mitigate this, respondents were assured of confidentiality and anonymity to promote honest and objective participation.

Another limitation is the geographical scope of the study, which was confined to hospitals within the Techiman Municipality. Although the findings offer valuable insights into the factors influencing NCD management in this context, they may not be generalizable to other municipalities, districts, or healthcare settings in Ghana. Variations in infrastructure, staffing, health-seeking behaviour, and resource availability may limit the applicability of these findings elsewhere.

Additionally, the use of a cross-sectional design and non-probability sampling techniques restricts the ability to establish causality and may affect the representativeness of the sample. Despite these limitations, the study contributes meaningfully to the understanding of patient perceptions, social influences, and systemic factors affecting NCD management, and provides useful evidence for improving chronic disease care in similar settings.

Abbreviations

AAMUSTED - Akenten Appiah- Menka University of Skills Training and Entrepreneurial

Development.

AOR - Adjusted Odds Ratio

ERC - Ethical Review Committee

GHS - Ghana Health Service

LMICs - Low- and middle- income countries

MOH - Ministry of Health

NCDs - Non - Communicable Diseases

WHO - World Health Organisation

Declarations

Ethics approval and consent to participate

Ethical clearance for this study was obtained from the Ghana Health Service Ethical Review Committee, with the ethical approval number GHS-ERC:046/03/25. In addition, authorization to conduct the research was granted by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development (AAMUSTED) to ensure compliance with institutional research standards. Administrative permission was also sought from the Techiman Municipal Health Directorate and the management of the selected hospitals where data collection took place. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki [34] which emphasize respect for persons, beneficence, and justice in human research.

Before participation, all respondents were informed about the purpose, procedures, and potential implications of the study. They were assured that participation was voluntary and that they had the right to withdraw from the study at any point without any adverse consequences. Written informed consent was obtained from all participants. The data was stored in a safe place where no one other than the research team could access it.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author upon reasonable request.

Disclosure of conflicts of interest

The authors declare that they have no competing interests.

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The authors bore the costs of the project.

Author contributions

C-K & B-A: conceptualization, methodology, data collection and manuscript draft.

J-A: review and editing.

D-Y: editing and visualization. P-A: data curation and data analysis. All the authors have read and approved the final manuscript.

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