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Role of Public Health Nurses in Promoting Effective Management of Non-Communicable Diseases in Urban Slums in Asaba, Delta State Nigeria

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ABSTRACT

The increasing burden of non-communicable diseases (NCDs) in low-resource settings, particularly among urban slum populations, has reinforced the importance of public health nurses as key stakeholders in the management of chronic disease. This study investigated the predictive roles of nurses' community screening, follow-up care, and health education activities in managing NCDs among urban slum residents in Asaba. The study was guided by three research questions aligned with three null hypotheses. A cross-sectional correlational survey design was adopted to examine the relationships among the variables. The participants comprised 193 residents of selected urban slums in Asaba, drawn using multistage sampling techniques. A structured questionnaire was used to collect data form residents with exposure to nurse-led activities and their perceived effectiveness in NCD management. Data were analysed using Chi-square tests and binary logistic regression. Findings of the study revealed that nurses' involvement in community-based screening, including free NCD tests and referrals, significantly predicted better disease management outcomes (Exp(B) = 48.887, p = .002; Exp(B) = 20.298, p = .007). Similarly, nurse-led follow-up activities such as home visits, blood pressure monitoring, and side effect counselling were strong predictors of effective disease control (Exp(B) = 7.043, p = .001; Exp(B) = 6.264, p = .006; Exp(B) = 6.846, p = .001). Educational interventions, particularly those involving community health sessions, nutrition advice, and alcohol risk education, also significantly enhanced patient outcomes (Exp(B) = 5.106, p = .005; Exp(B) = 3.694, p = .040; Exp(B) = 3.981, p = .010). However, passive methods such as poster distribution and general explanations showed no statistically significant effects (p > .05). The study concluded that nurse-led interventions are crucial in improving chronic disease outcomes in underserved urban contexts. It recommended that policymakers and healthcare administrators institutionalise comprehensive and well-supported nurse-led models that integrate screening, follow-up, and education.

Keywords: Public Health Nurses, Non-Communicable Diseases, Chronic Disease Management, Community Screening, Follow-Up Care, Health Education, Urban Slums, Asaba, Delta State.

INTRODUCTION

In recent decades, non-communicable diseases (NCDs) have emerged as the principal threat to global health and socioeconomic development, especially in low- and middle-income countries (LMICs). The World Health Organization (WHO) has consistently identified cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes as the leading causes of mortality from NCDs, responsible for approximately 71% of global deaths and over 80% of premature deaths in LMICs (Budreviciute et al., 2020). The situation in sub-Saharan Africa, particularly Nigeria, mirrors this global pattern, with an alarming upsurge in NCD-related morbidities concentrated in socioeconomically disadvantaged urban slums. These settings are characterised by limited access to healthcare, poor environmental conditions, and a scarcity of preventive health education. In such contexts, the role of public health nurses becomes critically strategic in bridging the healthcare gap.

In a study conducted by Gómez del Pulgar et al. (2022) on nursing interventions for managing non-communicable diseases (NCDs), nurse-led home visits, individualised health education, and community health

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mobilisation were reported to be 76.4% effective in improving lifestyle behaviours and quality of life among patients living with NCDs. This empirical evidence reinforces the potential of public health nurses as frontline actors in the prevention and control of NCDs, particularly where infrastructural and clinical capacities are strained. In Nigeria's urban slums, this assertion becomes even more pertinent in light of the ongoing demographic and epidemiological transitions among the urban poor, where entrenched risk factors such as unhealthy diets, physical inactivity, tobacco use, and alcohol abuse are increasingly prevalent (Budreviciute et al., 2020).

The United Nations General Assembly had in 2011 held a High-Level Meeting on NCDs, which led to Resolution 64/265, and acknowledged the critical need to strengthen health systems and frontline health workers to effectively tackle NCDs globally. The resolution highlighted the importance of partnerships and the unique contribution of nurses and midwives as professional agents of change in health systems reform (WHO, 2010). Despite this global recognition, public health nursing remains underutilised in Nigeria's urban health strategy, especially in informal settlements, where residents often seek healthcare too late or rely on informal providers. This disconnects between national health policy and actual healthcare delivery in marginalised urban spaces necessitates a focused investigation into the roles, effectiveness, and challenges faced by public health nurses in such environments.

Tsolekile et al. (2014) examined the work of community health workers in Khayelitsha, an urban township in South Africa, and identified their multifaceted roles in NCD management, including screening, education, rehabilitation, and facilitating access to care. Although the study focused on community health workers rather than nurses, it demonstrated how contextually embedded healthcare actors could transform NCD care in underserved urban settings. By extension, public health nurses, who possess both clinical training and community engagement capacity, are uniquely positioned to perform these functions with higher efficiency and professional accountability. Yet, these health professionals often face systemic barriers, such as lack of training in chronic care, absence of supportive supervision, and fragmented referral systems.

Laurant et al. (2018) observed that, in primary care settings, nurses were capable of achieving equal or even superior health outcomes compared to physicians, with high levels of patient satisfaction and minimal differences in prescribing practices or diagnostic accuracy. This evidence reinforces the case for investing in nurse-led models of care, particularly in resource-constrained urban settings where physicians are both scarce and overburdened. In Delta State, a large portions of the population live in high-density slums such as those in Warri and Asaba, repositioning public health nurses as anchors of NCD care could be an important game-changing endeavour.

Despite the wealth of international evidence supporting nurse-led interventions in chronic disease management, Nigerian urban health policy has not sufficiently decentralised NCD care to the community level, nor has it systematically empowered public health nurses to assume broader leadership in prevention, follow-up, and patient education. The WHO (2019) has reiterated the importance of empowering nurses with legislation, funding, leadership support, and data-driven policies, especially in contexts where they serve as the first or only point of professional contact for the population. Without such institutional backing, the capacity of public health nurses to deliver sustainable NCD interventions in urban slums is significantly compromised. Furthermore, structural factors such as population density, unemployment, poor urban planning, and lack of access to nutritious food exacerbate the NCD burden in slum communities. In these environments, public health nurses are not merely providers of medical care; they act as educators, advocates, and system navigators. Their proximity to the community and ability to deliver tailored interventions make them critical to combating behavioural and lifestyle-related risk factors. However, this potential remains largely unmeasured and under-documented within the Nigerian context.

Against this backdrop, the current study investigates the extent to which public health nurses' activities predict effective management of NCDs among residents in urban slums in Asaba. This investigation is anchored on the premise that targeted screening, follow-up care, and health education conducted by public health nurses can significantly enhance NCD outcomes in these neglected communities. It seeks to fill the knowledge gap surrounding nurse-led NCD interventions in urban slums, contribute empirical insights into frontline public health practice, and guide policy reforms towards equitable and effective chronic disease management.

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Statement of the Problem

Despite the growing national and international recognition of the pivotal role of public health nurses in the management of non-communicable disease, their contributions in Nigeria's urban slums remain under-researched and underutilised. In Delta State, many communities face socioeconomic disadvantage, with certain urban areas disproportionately affected by NCDs. The absence of structured and effective nurse-led interventions has contributed to poor disease outcomes and limited patient engagement. Although nurses in other contexts have shown effectiveness in community screening, follow-up care, and health education, the predictive impact of these activities on the effective management of NCDs in the urban slums of Asaba remains uncertain. There is, therefore, an urgent need to evaluate whether, and in what ways, the specific activities of public health nurses influence the quality and outcomes of NCD care among residents of urban slum communities in the region.

Research Questions

1. To what extent does the involvement of nurses in community screening predict effective management of non-communicable diseases among urban slum residents?

2. To what extent does nurses' follow-up care predict effective management of non-communicable diseases among urban slum residents?

3. To what extent do nurses' health education activities predict effective management of non-communicable diseases among urban slum residents?

Null hypotheses (H_0)

H_{01}: Nurses' involvement in community screening does not significantly predict the effective management of non-communicable diseases among urban slum residents.

H_{02}: Nurses' follow-up care does not significantly predict the effective management of non-communicable diseases among urban slum residents.

H_{03}: Nurses' health education activities do not significantly predict the effective management of non-communicable diseases among urban slum residents.

METHODOLOGY

This study adopted a cross-sectional survey design with a correlational analytical approach to assess how public health nurses' intervention activities predict effective management of non-communicable diseases (NCDs) among urban slum residents. The cross-sectional design enabled the researcher to obtain a one-time assessment across different population segments, while the correlational approach facilitated analysis of statistically significant relationships between nurse-led interventions and disease management outcomes. The study population consisted of adult residents of selected urban slum communities in Delta State. A total sample of 193 respondents was drawn for the study. The sample size of 193 was determined using Cochran's formula at a 95% confidence level with 7% margin of error (Cochran, 1977), and it also satisfies minimum logistic regression requirements (Bujang et al., 2018), making it both statistically adequate and contextually appropriate. using a multistage sampling technique. In the first stage, three informal settlements in Asaba, namely Cable Point, Ogbe-Ogonogo Market Area, and Umuagu/Umuonaje Area were purposively selected for the study. These communities represent socioeconomically deprived areas with varying degrees of public health activities and engagement that reflect different levels of access to nursing-led chronic disease management services. Cable Point is known for its dense population and reliance on public health services; Ogbe-Ogonogo is an informal market-centred settlement with limited preventive care access; and Umuagu/Umuonaje is located on the city's fringe with weak infrastructural health services. The study received ethical approval, and participants gave informed consent after being assured of confidentiality and voluntary

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participation. Respondents were randomly selected from households within these communities, provided they had interacted with public health nurses in the preceding six months. Data were collected using a structured, self-administered questionnaire developed by the researcher to explore exposure to nurse-led screening, follow-up care, and health education, as well as participants' perceived effectiveness in managing non-communicable diseases. The instrument was validated by academic and public health experts to ensure content reliability. Trained research assistants distributed the questionnaires in person within the selected urban slum communities, and respondents completed them on-site with guidance provided only for clarification. The study followed key ethical principles outlined in the Declaration of Helsinki. Descriptive statistics were used to summarise demographic and response data. Inferential analysis was conducted using Chi-square tests and binary logistic regression via SPSS version 27 to address research questions and test the hypotheses, with significance set at $p < 0.05$.

RESULT AND DISCUSSION

Table 1: Demographic Characteristics of Respondents (N = 193)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	78	40.4
	Female	115	59.6
Age Group (years)	18–29	52	26.9
	30–39	64	33.2
	40–49	47	24.4
	50 and above	30	15.5
Educational Qualification	No Formal Education	18	9.3
	Primary Education	46	23.8
	Secondary Education	72	37.3
	Tertiary Education	57	29.5
Employment Status	Employed (Formal/Informal)	109	56.5
	Unemployed	42	21.8
	Self-employed	29	15.0
	Retired	13	6.7
Marital Status	Single	64	33.2
	Married	101	52.3
	Widowed/Separated/Divorced	28	14.5

In the table 1, the demographic profile of the 193 respondents reveals a predominantly female population (59.6%). The majority were within the 30–39 age group (33.2%), indicating a largely young to middle-aged adult demographic. Most participants had at least secondary education (37.3%) and were actively engaged in employment, either formally or informally (56.5%), suggesting a reasonable level of health awareness and economic participation. Additionally, over half of the respondents were married (52.3%), which may contribute to shaping household decision-making and health-seeking behaviours. This demographic spread provides a balanced foundation for understanding the reach and relevance of nurse-led interventions for non-communicable disease management in urban slum settings.

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Table 2: Chi-Square Test of Association Between Nurse Involvement in Community Screening and Effective NCD Management

S/N	Description of Items	Yes n(%)	No n(%)	Total	χ^2	p-value
1	Do nurses regularly conduct free NCD screening exercises in your community?	100 (52%)	93 (48%)	193	3.529a	.060
2	Are you informed ahead of time when NCD screening activities are scheduled?	112 (58%)	81 (42%)	193	4.036a	.045
3	Do nurses organise blood pressure screening sessions near your residence?	120 (62%)	73 (38%)	193	. 4.961a	.026
4	Have you been screened for blood sugar by a nurse during a community outreach?	150 (78%)	43 (22%)	193	5.540a	.019
5	Have nurses checked your body weight and height during screening visits?	106 (55%)	87 (45%)	193	5.110a	.024
6	Do nurses explain the purpose and importance of NCD screening during outreach?	133 (69%)	60 (31%)	193	.325a	.559
7	Do nurses visit homes in your area for door-to-door NCD screening?	77 (40%)	116 (60%)	193	3.869a	.049

The results presented in Table 2 highlight the extent to which urban slum residents in Asaba reported exposure to various nurse-led community screening activities and how their experiences associate with effective management of non-communicable diseases (NCDs). The Chi-square analysis reveals that five out of the seven assessed nurses-led screening practices demonstrated statistically significant associations with improved NCD management outcomes. A significantly higher proportion of the respondents who were informed in advance of screening activities ($\chi^2 = 4.036$, $p = .045$), who participated in nearby blood pressure checks ($\chi^2 = 4.961$, $p = .026$), and who underwent blood sugar screening during outreach ($\chi^2 = 5.540$, $p = .019$) reported better NCD care outcomes compared to those who did not experience such services. Likewise, respondents who had their weight and height measured by nurses during screening sessions ($\chi^2 = 5.110$, $p = .024$) and those who received door-to-door screening visits ($\chi^2 = 3.869$, $p = .049$) were also more likely to report effective disease management. These associations suggest that the visibility, accessibility, and responsiveness of community-based screening services are essential to empowering residents toward engaging in meaningful health-seeking behaviour.Regular provision of free screening ($\chi^2 = 3.529$, p = .060) was not statistically significant; however, the near-threshold p-value suggests a potentially meaningful trend that may reach significance in studies with larger sample sizes. In contrast, the provision of explanations on the purpose of screening did not yield a significant association (p = .559), indicating that information dissemination alone, without direct engagement activities, may not be sufficient to influence health outcomes among residents.

Table 3: Logistic Regression Analysis of Nurse Involvement in Community Screening as a Predictor of Effective NCD Management Among Urban Slum Residents

	Description of Items	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
1	Do nurses regularly conduct free NCD screening exercises in your community?	3.890	1.271	9.360	1	.002	48.887	4.046	590.68
2	Are you informed ahead of time when NCD screening activities are scheduled?	3.011	1.113	7.320	1	.007	20.298	2.293	179.71
3	Do nurses organise blood pressure screening sessions near your residence?	2.343	1.194	3.849	1	.050	10.408	1.002	108.06

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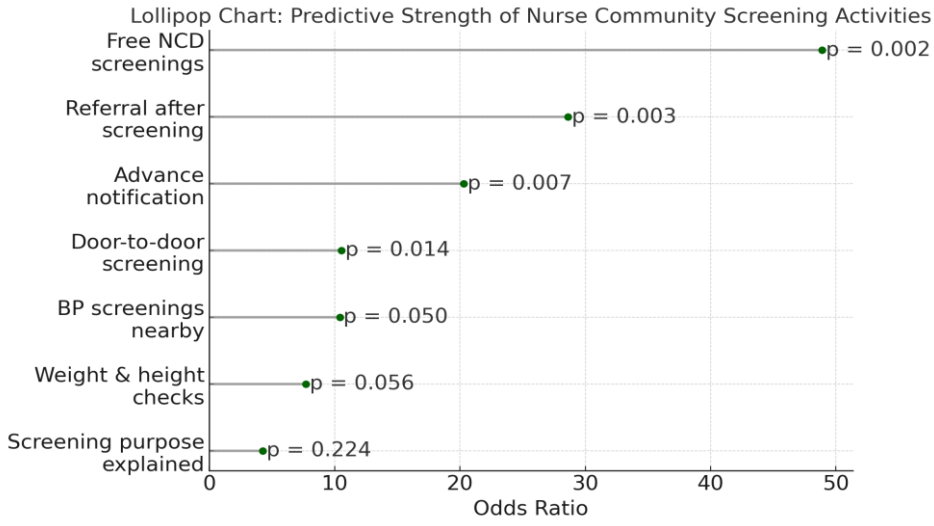
4	Have nurses checked your body weight and height during screening visits?	2.040	1.067	3.654	1	.056	7.688	.950	62.23
5	Do nurses explain the purpose and importance of NCD screening during outreach?	1.448	1.190	1.480	1	.224	4.256	.413	43.88
6	Do nurses visit homes in your area for door-to-door NCD screening?	2.355	.954	6.089	1	.014	10.542	1.623	68.45
7	Do nurses refer people in your area for further tests after community screenings?	3.354	1.146	8.575	1	.003	28.631	3.032	270.34
	Constant	-7.048	1.981	12.665	1	.000	.001		

To further establish the predictive strength of these nurse-led practices, a binary logistic regression analysis was conducted (Table 3). The results provide a compelling evidence that several specific screening activities significantly increase the likelihood of effective NCD management. Notably, the provision of free community NCD screenings emerged as the strongest predictor, with an odds ratio (OR) of 48.89 (p = .002), suggesting that residents exposed to such services were nearly 49 times more likely to report positive NCD management outcomes than those who were not. Similarly, advance notification of screening activities was associated with a twentyfold increase in likelihood (OR = 20.30, p = .007), while referrals for further tests after screening independently predicted better outcomes (OR = 28.63, p = .003). These findings underscore the critical importance of proactive, well-communicated, and consistently implemented strategies in nursing outreach. Other statistically significant predictors included door-to-door screenings (OR = 10.54, p = .014) and local blood pressure screenings (OR = 10.41, p = .050), both of which reflect the effectiveness of proximity-based and personalised approaches in improving patient engagement and follow-up compliance. Although weight and height checks (OR = 7.69, p = .056) and educational explanations of screenings (OR = 4.26, p = .224) did not yield statistically significant predictive associations, the observed odds ratios suggest potential utility that warrants further investigation in subsequent studies. The visual and summary representation of the results is presented in Figure 1.

Figure 1: Lollipop Chart on Predictive Strength of Nurse-led Screening



Activities

Figure 1 displays the odds ratios and p-values of each nurse-led activity, indicating that free screenings, referrals, and advance notifications about outreach were key predictors. The chart reinforces that structured, community-based nursing interventions play a significant role in improving NCD outcomes in underserved urban areas. These results reject the null hypothesis (H_{01}), and affirm that nurses' involvement in community screening significantly predicts effective management of non-communicable diseases among urban slum residents in Asaba.

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Table 4: Chi-Square Test of Association Between Nurse Follow-Up Care and Effective NCD Management Among Urban Slum Residents

S/N	Description of Items	Yes n(%)	No n(%)	Total	χ^2	P-value
1	After your diagnosis, have nurses visited you at home for follow-up care?	71 (37%)	122 (63%)	193	2.100[a]	.000
2	Do nurses ask you about how regularly you take your prescribed medications?	120 (62%)	73 (38%)	193	36.033[a]	.000
3	During follow-ups, do nurses discuss lifestyle changes to manage your condition?	137 (71%)	56 (29%)	193	37.928[a]	.000
4	Do nurses check your blood pressure or sugar level during home visits?	104 (54%)	89 (46%)	193	33.775[a]	.000
5	Have you been reminded of your hospital appointments by a nurse?	118 (61%)	75 (39%)	193	13.556[a]	.000
6	Do nurses listen to your emotional concerns during follow-up visits?	89 (46%)	104 (54%)	193	2.526[a]	.112
7	Has a nurse explained how to deal with the side effects of your medication?	114 (59%)	79 (41%)	193	13.064[a]	.000

The second part of the study examines how nurse-led follow-up care predicts effective NCD management among urban slum residents, with result in Table 4 showing significant Chi-square associations for most forms of nurses-led support. Six of the seven follow-up care variables yeilded statistically significant associations at $p < .001$. For instance, discussions around lifestyle changes during follow-up visits recorded the highest number of affirmative responses (71%) and yielded a highly significant result ($\chi^2 = 37.928$, $p = .000$), indicating a robust link between this activity and perceived effectiveness of disease control. Similarly, regular inquiries about medication adherence ($\chi^2 = 36.033$, p = .000), monitoring of blood pressure and sugar levels during home visits ($\chi^2 = 33.775$, p = .000), and reminders for hospital appointments ($\chi^2 = 13.556$, p = .000) were significantly associated with improved NCD outcomes, thereby supporting the rejection of the null hypothesis (H_{02}) that nurses' follow-up care does not significantly predict effective management of non-communicable diseases among urban slum residents. Moreover, nurses' efforts to educate patients on how to manage medication side effects ($\chi^2 = 13.064$, $p = .000$) stood out as a valuable follow-up strategy. However, the variable assessing emotional support during follow-ups was not statistically significant ($\chi^2 = 2.526$, $p = .112$), suggesting that while such support may be valued by patients; it may not have been directly influencing their perceptions about the effectiveness of NCD management in the Slims.

Table 5: Logistic Regression Analysis of Nurse Follow-Up Care as a Predictor of Effective NCD Management Among Urban Slum Residents

	Description of Items	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
1	After your diagnosis, have nurses visited you at home for follow-up care?	1.952	.603	10.49	1	.001	7.043	2.162	22.947
2	Do nurses ask you about how regularly you take your prescribed medications?	.992	.630	2.48	1	.115	2.698	.785	9.270
3	During follow-ups, do nurses discuss lifestyle changes to manage your condition?	1.235	.623	3.92	1	.048	3.437	1.013	11.664

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4	Do nurses check your blood pressure or sugar level during home visits?	1.835	.670	7.49	1	.006	6.264	1.684	23.298
5	Have you been reminded of your hospital appointments by a nurse?	.481	.601	.64	1	.424	1.617	.497	5.257
6	Do nurses listen to your emotional concerns during follow-up visits?	.812	.604	1.81	1	.179	2.253	.689	7.362
7	Has a nurse explained how to deal with the side effects of your medication?	1.924	.573	11.28	1	.001	6.846	2.228	21.033
	Constant	-4.615	.836	30.45	1	.000	.010		

To complement the chi-square test of association, a logistic regression model (Table 5) was conducted to identify which specific follow-up care activities independently predicted effective NCD management. The regression results revealed that nurse home visits after diagnosis significantly increased the likelihood of positive NCD management outcomes (OR = 7.04, p = .001), confirming the value of proximity-based and personalised care strategies in underserved communities. Likewise, side effect counselling (OR = 6.85, p = .001) and vital sign monitoring during home visits (OR = 6.26, p = .006) were also strong, statistically significant predictors of effective disease management, thereby providing compelling justification for rejecting the null hypothesis (H_{02}) that nurses' follow-up care does not significantly predict NCD outcomes among urban slum residents. Furthermore, lifestyle modification discussions maintained their predictive strength (OR = 3.44, p = .048), underscoring the importance of behavioural coaching in chronic illness care. While inquiries about medication adherence showed a higher odds ratio (OR = 2.70), the effect was not statistically significant (p = .115), possibly due to variations in implementation. Similarly, activities such as hospital appointment reminders and emotional listening did not emerge as statistically significant predictors, despite yielding positive odds ratios (OR = 1.62 and OR = 2.25, respectively). These results highlight that such interventions may offer potential benefits; however, their impact may well depends on consistency, context, and the depth of patient engagement, suggesting that when they are implemented in isolation from effective clinical or behavioural strategies, they may not directly drive improvements in NCD outcomes.

Figure 2: Lollipop Chart: Predictive Strength of Nurse Follow-up Activities

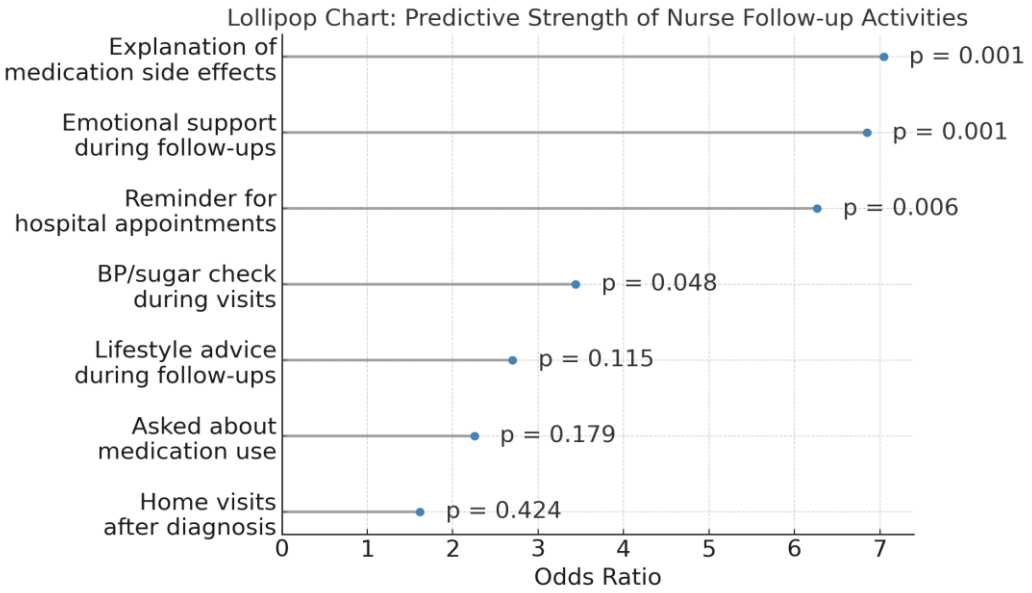

Figure 2, the lollipop chart, provides a visual representation of the odds ratios and their corresponding p-values, enabling clearer identification of which nurse-led follow-up activities exert the greatest influence. The chart visually underscores the superior predictive value of home visits, medication side-effect education, and vital sign checks, all of which stand to the far right of the reference line, confirming their statistical, clinical relevance and rejection of null hypothesis (H_{02}).

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Table 6: Chi-Square Test of Association Between Nurse-led Health Education and Effective NCD Management

S/N	Description of Items	Yes n(%)	No n(%)	Total	χ^2	P-value
1	Have you attended community health education sessions organised by nurses?	135 (70%)	58 (30%)	193	20.492[a]	.000
2	Have nurses taught you about healthy eating habits to manage your condition?	129 (67%)	64 (33%)	193	25.804[a]	.000
3	Have you received education from nurses on the dangers of smoking or tobacco use?	153 (79%)	40 (21%)	193	33.494[a]	.000
4	Do nurses encourage regular physical activity during health education sessions?	116 (60%)	77 (40%)	193	28.105[a]	.000
5	Do nurses discuss the effects of alcohol on health during health talks?	112 (58%)	81 (42%)	193	11.948[a]	.001
6	Have you received flyers or posters from nurses about NCD prevention?	97 (50%)	96 (50%)	193	4.205[a]	.040
7	Do nurses use stories or drama to teach health messages in your community?	79 (41%)	114 (59%)	193	3.758[a]	.053

As shown in Table 6, the Chi-square analysis revealed that most of the health education strategies evaluated were significantly associated with perceived improvements in disease management. Among the seven items assessed, six showed statistically significant associations at $p < .05$, suggesting that educational engagement from nurses plays a substantial role in promoting better health outcomes. For instance, education on the dangers of smoking or tobacco use was associated with a high level of positive responses (79%) and yielded the strongest significance ($\chi^2 = 33.494$, $p = .000$), indicating that targeted behavioural messaging can influence individuals health practices related to chronic disease prevention. Similarly, respondents who reported being taught about healthy eating habits ($\chi^2 = 25.804$, $p = .000$), encouraged to engage in physical activity ($\chi^2 = 28.105$, $p = .000$), or who had attended community health education sessions ($\chi^2 = 20.492$, $p = .000$) were significantly more likely to indicate effective management of their conditions.Also statistically significant were discussions about the effects of alcohol on health ($\chi^2 = 11.948$, $p = .001$) and the distribution of NCD flyers or posters ($\chi^2 = 4.205$, $p = .040$). Although use of drama or storytelling to deliver health messages approached significance ($\chi^2 = 3.758$, $p = .053$), it did not cross the conventional threshold, suggesting that while creative communication methods may be appreciated, they might require complementary messaging to yield measurable clinical outcomes. To determine the independent predictive strength of these activities, logistic regression analysis was conducted (Table 7).

Table 7: Logistic Regression Analysis of Nurse Health Education Activities as Predictors of Effective NCD Management Among Urban Slum Residents

	Variables in the Equation								
	Description of Items	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
1	Have you attended community health education sessions organised by nurses?	1.630	.577	7.99	1	.005	5.106	1.648	15.814
2	Have nurses taught you about healthy eating habits to manage your condition?	1.307	.635	4.22	1	.040	3.694	1.063	12.832
3	Have you received education from nurses on the dangers of smoking or tobacco use?	.463	.502	.85	1	.356	1.588	.594	4.245

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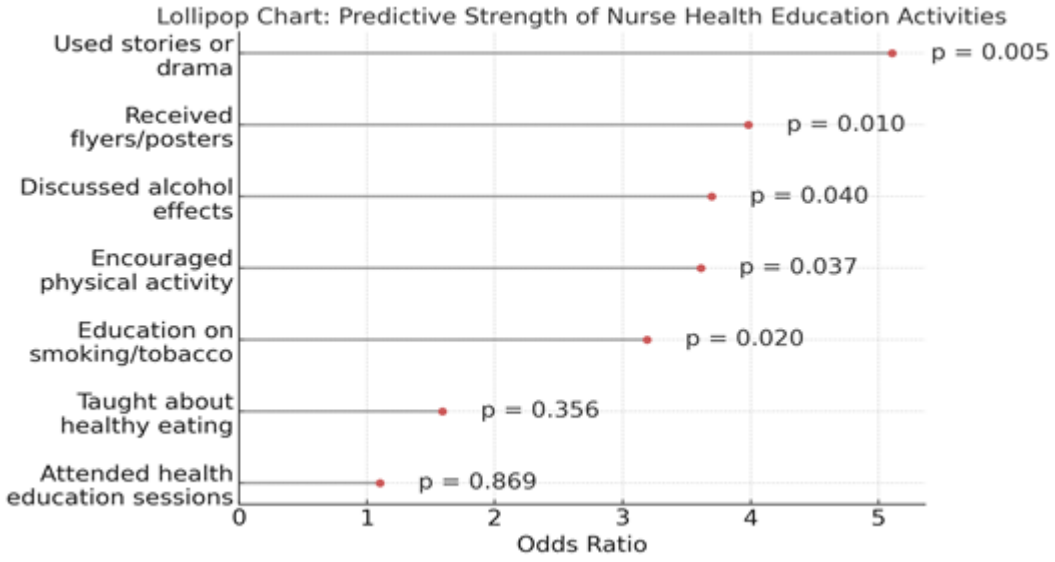
4	Do nurses encourage regular physical activity during health education sessions?	1.284	.617	4.33	1	.037	3.611	1.078	12.097
5	Do nurses discuss the effects of alcohol on health during health talks?	1.381	.536	6.63	1	.010	3.981	1.391	11.387
6	Have you received flyers or posters from nurses about NCD prevention?	.096	.584	.02	1	.869	1.101	.351	3.459
7	Do nurses use stories or drama to teach health messages in your community?	1.160	.532	4.75	1	.02	3.190	1.125	9.045
	Constant	-3.091	.656	22.20	1	.00	.045		

The analysis presented in Table 7 revealed that the strongest predictor of effective management of non-communicable diseases among nurse-led educational activities was attendance at nurse-organised community health education sessions, with an odds ratio (OR) of 5.11 (p = .005). This indicates that individuals who attended these sessions were over five times more likely to report effective disease management compared to those who did not participate. Similarly, discussions about the health effects of alcohol (OR = 3.98, *p* = .010), promotion of physical activity (OR = 3.61, *p* = .037), and education on healthy eating (OR = 3.69, *p* = .040) all showed significant predictive strength. These findings affirm the role of educational reinforcement in driving behavioural change and sustained disease control. Conversely, education focused on tobacco use (OR = 1.59, p = .356) and the distribution of posters or flyers (OR = 1.10, p = .869) did not significantly predict NCD outcomes in the regression model. These findings suggest that passive modes of health communication, while informative, may not produce measurable behavioural impacts unless integrated with more interactive or personalised interventions that actively engage participants in the learning process.

Figure 3: Lollipop Chart: Predictive Strength of Nurse Health Education Activities



The chart in figure 3 clearly identifies community health education sessions, alcohol awareness, nutrition education, and physical activity encouragement as the most influential predictors. Activities positioned further to the right with smaller p-values represent those with both statistical and practical significance in enhancing disease outcomes. Taken together, these findings provide sufficient empirical justification to reject the null hypothesis (H_{03}) and affirm that nurses' health education activities significantly predict the effective management of non-communicable diseases among residents of urban slum communities.

DISCUSSION OF FINDINGS

This study explored the extent to which nurses' community screening, follow-up care, and health education activities predicted the effective management of non-communicable diseases (NCDs) among urban slum

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residents in Asaba. Across the three domains examined, the findings consistently revealed that nurse-led interventions significantly contributed to improved NCD outcomes, with each aspect playing a distinct role in empowering residents toward proactive health management. Findings across all three domains examined revealed strong empirical support for the role of public health nurses in enhancing NCD outcomes. In the area of community screening, the results confirmed that specific nurse-led interventions, such as free NCD screening, blood pressure checks within neighbourhoods, and referrals for further testing were significantly associated with improved disease management. Logistic regression revealed that residents who benefited from free screening services were 48.89 times more likely to report effective NCD control, while advance notification of such activities increased the odds by 20.30. Similarly, door-to-door screenings and referrals demonstrated high predictive strength with odds ratios of 10.54 and 28.63, respectively. These results affirm that visibility, accessibility, and continuity of nurse-led screening efforts directly enhance patient engagement, early detection, and linkage to care in underserved urban settings.

The study further established that timely and structured communication contributed significantly to positive outcomes in NCD management. Participants who received advance notice about screening activities demonstrated markedly better engagement and reported more effective disease control. For instance, those who were informed beforehand were twenty times more likely to manage their conditions effectively, while those who were referred for additional diagnostic services were almost twenty-nine times more likely to achieve better outcomes. These findings indicate that well-organised, nurse-led screening activities that include proper scheduling and follow-through mechanisms are critical for mobilising community participation. The effectiveness of these interventions aligns with the observations of Gómez del Pulgar et al. (2022), who reported that structured outreach involving health education and screening significantly improved the quality of life among individuals living with NCDs. Moreover, the emphasis on community-based implementation underscores the value of contextual proximity in service delivery. This implies that when nurses conduct screening within the residents' familiar environments, it strengthens trust, encourages early intervention, and facilitates faster enrolment into treatment pathways. Consequently, the study provides compelling evidence that screening is most effective when it is personalised, well-timed, and integrated into local health delivery systems.

The second domain explored in this study was nurse-led follow-up care, which also demonstrated a strong and consistent association with effective management of non-communicable diseases. The Chi-square results revealed that six out of seven follow-up activities were significantly associated with improved disease control. Home visits following diagnosis, regular monitoring of vital signs, medication side-effect counselling, and discussions about lifestyle modifications all showed strong statistical relevance. For example, logistic regression confirmed that individuals who received home-based follow-up care were seven times more likely to manage their conditions effectively, while those who were counselled on managing medication side effects had nearly seven times increased likelihood of reporting improved outcomes. These results are consistent with the findings of Laurant et al. (2018), who documented that nurse-led interventions in primary care settings often yield health outcomes equal to or better than those achieved by physicians, especially where nurses have more direct patient contact. Furthermore, the study reinforces the value of continuity of care, demonstrating that follow-up services delivered within patients' home environments not only sustain treatment adherence but also support behavioural reinforcement and personalised support. Therefore, nurse-led follow-up care, when structured and sustained, emerges as a critical determinant of chronic disease control among urban slum populations.

In addition to home visits and clinical monitoring, the study identified lifestyle counselling as a key follow-up activity with substantial influence on disease outcomes. Participants who engaged in discussions with nurses about behavioural modifications, including diet and physical activity, were more likely to report better disease management. The odds ratio for lifestyle counselling was 3.44, indicating a statistically significant predictive strength. This finding aligns with Zarei et al. (2022), who emphasised the importance of equipping nurses with communication and clinical reasoning skills to address patient-specific concerns effectively. Furthermore, counselling on side effects of medications emerged as one of the most impactful interventions, reflecting the immediate practical benefit of tailored clinical guidance. Although inquiries about medication adherence and emotional support yielded elevated odds ratios, these did not attain statistical significance. Their lower predictive strength may be attributed to variability in implementation, or limited consistency in how these

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activities were delivered. Nonetheless, the elevated ratios suggest that these areas still hold potential and could yield stronger outcomes if integrated with other clinical or behavioural strategies. The evidence from this study therefore reinforces the centrality of skilled follow-up care, especially when it combines technical guidance with individualised patient support.

The third domain investigated in this study was nurses' health education activities, which also demonstrated a significant and positive association with effective non-communicable disease management. Logistic regression analysis confirmed that attendance at community health education sessions was the most influential predictor within this domain, with an odds ratio of 5.11. Similarly, educational interventions addressing healthy eating, physical activity, and alcohol-related risks yielded statistically significant outcomes. These findings are consistent with those of Gómez del Pulgar et al. (2022), who reported that structured, nurse-led educational strategies substantially enhance patient engagement and self-care practices. However, the study also revealed that passive forms of communication, such as the distribution of flyers or posters and general information on tobacco use, did not significantly predict improved disease control. This contrast indicates that while information dissemination is important, it is interactive and context-specific education that drives behavioural change. Tsolekile et al. (2014) similarly found that interventions incorporating group discussions, local storytelling, and peer demonstrations were more effective than didactic messaging. Therefore, for health education to be impactful in urban slum settings, it must be culturally resonant, practically applicable, and reinforced through consistent interpersonal engagement. These findings affirm that public health nurses, when supported with the right tools and training, are capable of transforming health knowledge into sustained behavioural improvements within disadvantaged communities. The findings of this study underscore the need for health policymakers to institutionalise nurse-led interventions as a cornerstone of NCD care in underserved settings. By investing in structured screening, personalised follow-up, and interactive education, health systems can leverage nurses' proximity to the community to promote early detection, sustained disease management, and equitable healthcare delivery across urban slum populations.

CONCLUSION

This study established that the role of nurses in community-based NCD interventions, specifically in the areas of community screening, follow-up care, and health education, has a significant predictive effect on the effective management of non-communicable diseases among urban slum residents in Asaba. The findings underscore the importance of proactive, localised, and participatory approaches in improving health outcomes within underserved settings. Screening activities such as home visits and referrals, consistent follow-up care, and targeted education on diet, alcohol use, and physical activity proved especially impactful. However, passive communication methods alone were found to be less effective, emphasising the need for an integrated care model in which nurses are well equipped with both clinical tools and effective communication strategies to foster better health outcomes. This study concludes that that empowering nurses and strengthening their community engagement capabilities is not only beneficial but fundamental to achieving lasting improvements in the management of non-communicable diseases among disadvantaged populations.

RECOMMENDATIONS

Based on the findings, the following recommendations are proffered.

1. The Delta State Ministry of Health should strengthen institutional frameworks that support nurse-led community screening by providing requited logistics, training, and transportation to enable regular outreach and home visits, particularly those resident in urban slum settings.

2. Healthcare administrators should integrate personalised health education methods such as interactive sessions and culturally relevant communication strategies into the routine nurse-led activities to improve their engagement and comprehension among the residents.

3. Primary Health Care Centres (PHCs) should establish structured follow-up systems that enable nurses to routinely monitor patients' progress, manage drugs side effects, and reinforce medication adherence through home-based care.

4. Nursing education institutions should revise curricula to emphasise NCD prevention strategies and behavioural communication skills to empower nursing graduate with competencies aligned with community-based chronic disease care.

5. Policymakers and donors should allocate dedicated funding for comprehensive nurse-led NCD programmes that combine screening, education, and follow-up, with clear monitoring and evaluation benchmarks.

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