

A Comparative Assessment of Onchocerciasis Knowledge and Ivermectin Uptake in Two Communities of Kano State, Nigeria

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Abstract

Onchocerciasis, also known as river blindness, which is a neglected tropical disease caused by Onchocerca volvulus and transmitted by Simulium damnosum blackflies, continues to be an important public health problem in Nigeria, affecting about 33 million people. The key approach in managing this condition is the use of Community Directed Treatment with Ivermectin (CDTI), and the effectiveness of this approach mainly depends on knowledge levels, attitudes and practice of the communities involved. Nevertheless, there is a lack of data on the community knowledge, attitude and practices on onchocerciasis prevention in the endemic areas of Kano State, northern Nigeria. This research study adopted a comparative cross-sectional design where data were collected from 172 respondents in two riverine communities: Massu (Sumaila LGA) and Tiga (Bebeji LGA), which are located in Kano South, Nigeria. Structured interviewer-administered questionnaire was used to gather relevant data, which were then analysed using frequencies, percentages and chi-square tests. About 78.4% of the respondents were males who were primarily farmers (50.0%) and only underwent Quranic education (54.4%). Although most participants (88.4%) knew about blackflies, only 26.2% knew that onchocerciasis resulted from bites by blackflies. Significantly higher proportion of respondents in Massu (86.4%) knew about the disease as opposed to Tiga (49.5%) ($\chi^2 = 26.43$, $p < 0.001$). Although 93.0% of respondents in both communities expressed a willingness to participate in future ivermectin treatment, the actual uptake of ivermectin was markedly lower in Tiga (13.2%) than in Massu (70.4%) ($\chi^2 = 58.33$, $p < 0.001$). This disparity indicates that the low treatment coverage was primarily attributable to shortcomings in the implementation of Community-Directed Treatment with Ivermectin (CDTI), such as irregular drug distribution and inadequate programme coverage, rather than a lack of community acceptance. Consequently, enhancing CDTI logistics, increasing the number of Community Drug Distributors (CDDs), and strengthening community health education are critical measures for advancing the elimination of onchocerciasis in Kano State.

Keywords: onchocerciasis; knowledge; attitude; practice; ivermectin.

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INTRODUCTION

Onchocerciasis is a disabling neglected tropical disease that affects humans with infections from *Onchocerca volvulus*, a filarial nematode transmitted through repeated bites of female *Simulium damnosum sensu lato* (s.l.) complex blackflies. The disease has been classified as the second leading cause of blindness from infectious diseases globally as per the World Health Organization (WHO, 2024). Approximately 249.5 million individuals in 28 endemic nations require preventive chemotherapy interventions for this disease (WHO, 2024). Pathogenesis in patients occurs following inflammation induced by microfilariae secreted from adult female worms, which can survive up to 15 years inside subcutaneous nodules (WHO, 2024). Microfilariae migrate throughout the skin, eyes, and body systems, resulting in symptoms including excessive itching, skin thickening, skin depigmentation, subcutaneous nodules, and eye damage leading to blindness (WHO, 2023). According to the Global Burden of Disease study, an estimated 14.6 million persons infected with the disease had onchocercal skin disease by 2017, whereas 1.15 million individuals were suffering from vision loss (WHO, 2025). The condition adversely impacts socioeconomic prosperity as it leads to reduced agricultural output, inability to generate income, and poverty in endemic communities in rural sub-Saharan African communities near rivers (WHO, 2024).

Sub-Saharan Africa harbors more than 99% of global *O. volvulus* infections (Schmidt *et al.*, 2022), with Nigeria among the most severely impacted nations. In Nigeria, onchocerciasis transmission occurs through nine cytospecies of the *Simulium damnosum* complex (Post *et al.*, 2011). Endemicity has been established in 30 out of the 36 states as well as the Federal Capital Territory. Epidemiological mapping conducted from 1994 to 1996 estimated that over 50 million Nigerians were at risk of infection (Ityonzughul *et al.*, 2024), although according to current WHO statistics, approximately 33 million persons in the country remain vulnerable. Nigeria also accounts for the majority of the global prevalence of blindness from *O. volvulus* infections, as the country has been linked to nearly 40% of global cases of blindness from this parasite (Post *et al.*, 2011; Olanrewaju *et al.*, 2025). Northern Nigeria, specifically the savanna endemic belt, is traditionally marked by extensive transmission. Dispersal of adult flies in this region is estimated at 234,000 km², with approximately half of the affected areas occurring in the river basins of north central Nigeria (Olanrewaju *et al.*, 2025). Kano State is situated within the northwestern savanna region and is part of the fly belt intersected by the Kano River system and associated dams.

Since 1991, Community-Directed Treatment with Ivermectin (CDTI) has been the primary intervention strategy for controlling onchocerciasis in Nigeria. Over 34 million Nigerians have been treated with ivermectin, translating to a national geographical coverage of 80.6% (Osei *et al.*, 2023). The 2021-2030 WHO NTD Roadmap envisages the interruption of transmission in all endemic countries by 2030 through continuous annual Mass Drug Administration (MDA) of eligible populations to a coverage level of 80% or more (WHO, 2023). Substantial strides towards achievement of this objective have been made in Nigeria. Plateau and Nasarawa States recorded interruption of transmission in 2021, whereas Abia, Anambra, Enugu, and Imo States reported the largest stop-treatment decision globally at that time (Miri *et al.*, 2023; Ityonzughul *et al.*, 2024). However, gains are uneven within the country. Inadequate transmission suppression in Kaduna State following an early decision to cease CDTI despite decades of annual MDAs highlights the threat to elimination progress and the need for continued community engagement and monitoring of coverage levels (Olanrewaju *et al.*, 2025). This aspect is especially relevant in northern Nigerian endemic zones, including Kano State, where there is a dearth of literature on the subject.

The success of CDTI relies to a great extent on the degree of knowledge of the disease and its vectors among endemic populations, positive attitudes towards intervention measures, and proper adoption of prevention practices. These aspects are usually investigated using Knowledge, Attitude, and Practice (KAP) surveys (Launiala, 2009). Numerous KAP surveys carried out in sub-Saharan Africa have shown that misconception about disease pathogenesis, negative perception of onchocerciasis patients, and lack of availability of ivermectin adversely impact on program success. For instance, Domche et al., (2021) report that despite high *Simulium* biting rate, the Centre Region in Cameroon lacks awareness regarding *Simulium* ecology, since many participants were unable to correctly describe breeding places and behavior of the vectors. Similarly, inadequate knowledge and the existence of co-morbid non-communicable conditions were cited by Bhattacharyya et al., (2023) as major obstacles in implementing CDTIs in the Bafut Health District. Low levels of education and false perception of causation are key barriers for low KAP scores in multi district Cameroonian endemic zones as described by Tchuata et al. (2021). Similar trends have also been documented in Nigeria. Busari et al., (2022) show that the residents of Alabameta community in Osun State recognize "Amukuru" flies as the causative agents of onchocerciasis, yet the residents lack knowledge about blackfly breeding sites and potential impacts of the disease. Meanwhile, most individuals are unaware of ivermectin. In Ogun State, Surakat et al., (2018) note that knowledge gaps and drug unavailability represent significant barriers towards achieving MDA targets. Overall, these findings highlight the persisting KAP knowledge gaps observed in neglected tropical disease endemic communities where awareness does not guarantee positive attitudes or prevention behavior (Launiala, 2009).

There have been several attempts to conduct KAP surveys to understand CDTI practices in sub-Saharan African endemic zones, including Nigeria, but very limited peer-reviewed data exists from northern Nigerian regions such as Kano State. The unique epidemiology and context of northern Nigeria, characterized by savanna transmission, Hausa-dominated agrarian communities, proximity to active breeding zones for *Simulium* blackflies around rivers and dams, and diverse history of CDTIs implemented in the various Local Government Areas, reduce the generalizability of southern Nigerian data and studies from West Africa's forest zones. Therefore, this study was undertaken to bridge this critical evidence gap.

The broad aim of this study was to assess the knowledge, attitude, and practice of community members regarding onchocerciasis and ivermectin acceptance in two endemic riverine communities Massu (Sumaila Local Government Area) and Tiga (Bebeji Local Government Area) in Kano State, northern Nigeria. The findings are intended to generate actionable, evidence-based recommendations for the strengthening of the CDTI programme in Kano State and to contribute to the broader literature informing onchocerciasis elimination strategies in the savanna-zone endemic foci of northern Nigeria.

MATERIALS AND METHODS

Study Area

The study was undertaken in two rural communities within the southern senatorial district of Kano State (Kano South), North West Nigeria. The study sites fall within the Sudan savanna ecological zone, which is marked by one rainy season annually (May-September) and a prolonged dry season (October-April). The mean annual rainfall in the region is 750-900 mm per year. The major activities carried out by people in these communities include subsistence farming, livestock rearing, and fishing, all of which are associated with the frequent contact with the rivers and increase the risk of exposure to *Simulium*.

The first site used in this study is Tiga community, located within Bebeji Local Government Area (LGA), around Tiga Dam, in proximity 11°23'53.64" N, 08°29'19.14" E. The Tiga Dam is an earthen structure constructed across the Kano River, which is a major tributary of Hadejia River. Tiga Dam has a surface area of about 178 km², with the total storage capacity of water being 1,978 × 10⁶ m³ (Umar *et al.*, 2024). Fast-moving and highly oxygenated water that comes out of the spillway of the reservoir, in addition to other areas along the Kano River, offers ideal breeding grounds for *S. damnosum s.l.*, considering the ecological needs of the species complex in northern Nigeria (Post *et al.*, 2011; Olanrewaju *et al.*, 2025).

The second site of the investigation, Massu community (11°12'7.28" N, 08°48'20.63" E), falls within Sumaila Local Government Area, and is roughly 30 km south-east of Tiga, in the Kano River catchment area. The economy of this community is mainly based on the cultivation of subsistence and cash crops, including groundnut, millet, and rice. Similar to the Tiga community, the Massu community is in proximity of waterways connected to the upper parts of the Kano River basin, with regular community interactions with these waterways being recorded during data collection. Both sites belong to the catchment area of the Kano State Neglected Tropical Disease (NTD) control programme and experienced different intensities of CDTI application prior to this study.

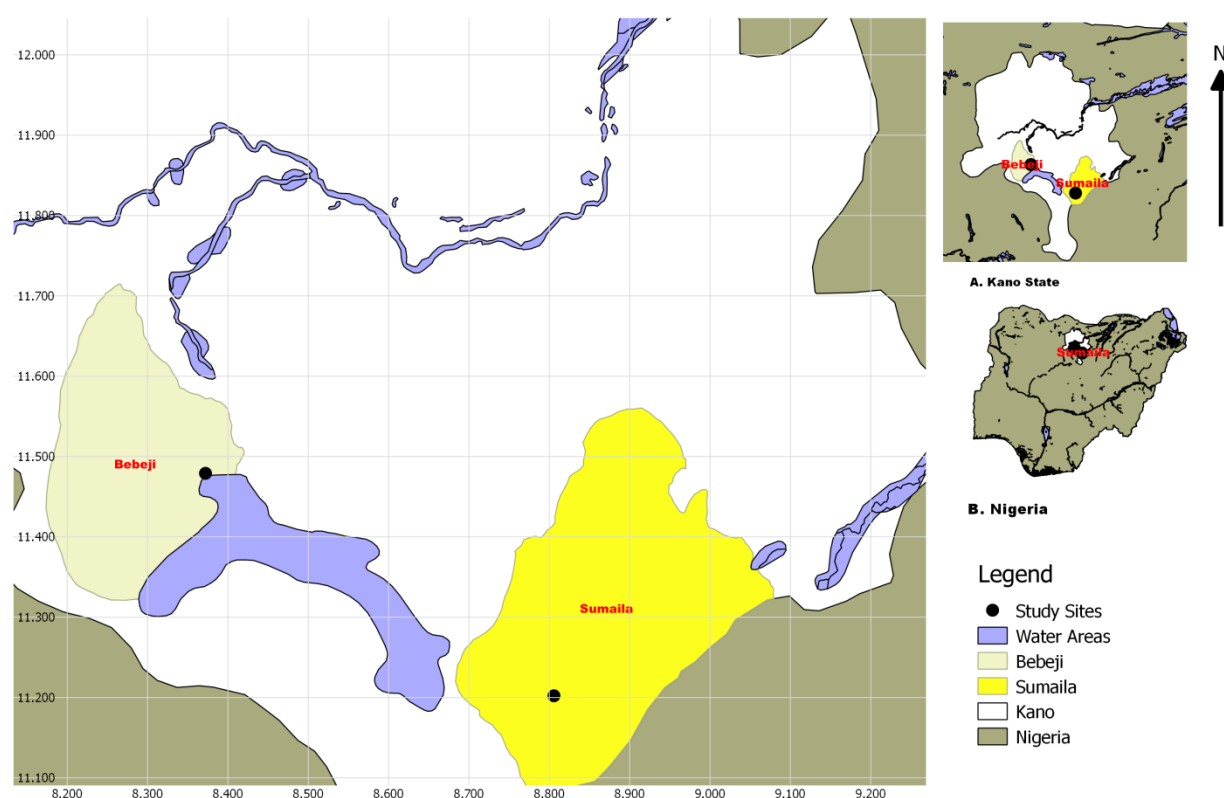


Figure 1. Map of the Study Sites in Kano State, Nigeria

Study Design

A community-based, comparative cross-sectional survey was conducted between January and April 2026. The cross-sectional design was selected as the standard approach for the simultaneous assessment of KAP variables and their associations with sociodemographic predictors at a single point in time, consistent with the methodology adopted in comparable KAP studies on onchocerciasis across sub-Saharan Africa (Domche *et al.*, 2021; Busari *et al.*, 2022).

Study Population and Eligibility Criteria

The target population comprised adult and adolescent residents of Massu and Tiga communities who had lived in their respective communities for a minimum of six months at the time of data collection. Individuals who provided written informed consent, or verbal assent were eligible for inclusion. Individuals who were acutely ill, cognitively impaired, or temporarily visiting the community were excluded. Given that both communities are predominantly Hausa-speaking, the questionnaire was administered in Hausa by trained field assistants, ensuring linguistic and conceptual accessibility across educational levels.

Sample Size Determination

The minimum required sample size was estimated using the standard formula for cross-sectional prevalence surveys.

$$n = Z^2 p(1 - p) / d^2$$

where $Z = 1.96$ (two-tailed, $\alpha = 0.05$), $p = 0.50$ (maximum variance, applied in the absence of a prior community-specific KAP prevalence estimate, as recommended by Lwanga & Lemeshow, 1991), and $d = 0.075$ (acceptable margin of error of 7.5%), precision level (margin of error) of 7.5% was selected to achieve an acceptable balance between statistical precision and the logistical constraints associated with conducting field surveys in two remote riverine communities. This yielded a minimum sample of $n = 171$, which was rounded to 172 to account for potential non-response and distributed proportionally between the two communities based on estimated relative community population sizes (Massu: $n = 81$; Tiga: $n = 91$).

Ethical Considerations

Ethical clearance was sought from the Ministry of Health, Kano State (NHREC/17/03/2018). Approval to carry out the research was also sought from the community chiefs (Mai Unguwa) in both research sites before the commencement of data collection. Informed consent was sought from all participants prior to enrolment into the study. The participants voluntarily agreed to take part in the research and were aware of their right to quit at any time without being penalised.

Data Collection Instrument

Data were collected using a structured, interviewer-administered questionnaire developed in English and translated into Hausa. The instrument was adapted from validated questionnaires used in published KAP studies on onchocerciasis in sub-Saharan Africa (Wogu and Okaka, 2008; Domche *et al.*, 2021; Busari *et al.*, 2022).

Statistical Analysis

All statistical analyses were performed using RStudio version 2026.01.0 (R Foundation for Statistical Computing, Vienna, Austria). Categorical variables were summarised using frequencies and percentages. Chi-square tests were used to compare categorical variables between communities. Statistical significance was set at $p < 0.05$. Analyses were conducted using base R statistical packages. Since the primary objective of the study was to compare categorical outcomes between two communities rather than identify independent predictors, Pearson's Chi-square test was considered the most appropriate inferential statistical method.

RESULTS

Sociodemographic Characteristics of Respondents

A total of 172 respondents participated in the study, comprising 81 (47.1%) from Massu (Sumaila LGA) and 91 (52.9%) from Tiga (Bebeji LGA). Their sociodemographic characteristics are presented in Table 1. The majority of respondents were male (134; 77.9%), with a higher

male proportion in Massu (72; 90.0%) compared to Tiga (62; 68.1%). The predominant age group in both communities was 18–30 years (66; 38.4%). Most respondents (93; 54.4%) had received only Quranic (Islamic) education, and farming was the most common occupation (86; 50.0%). The majority (103; 60.2%) had lived in their respective communities for more than 20 years.

Table 1: Sociodemographic characteristics of respondents by community (N = 172)

Variable	Category	Massu (n=81)		Tiga (n=91)		Total N=172
		n	%	n	%	n
Age group	Under 18 years	5	6.2	13	14.3	18
	18–30 years	29	35.8	37	40.7	66
	31–40 years	19	23.5	14	15.4	33
	41–50 years	14	17.3	18	19.8	32
	≥51 years	14	17.3	9	9.9	23
Sex	Male	72	90.0	62	68.1	134
	Female	9	10.0	29	31.9	38
Marital status	Married	66	81.5	71	78.0	137
	Single	9	11.1	17	18.7	26
	Separated/Divorced	6	7.4	3	3.3	9
Education level	Quranic education only	38	46.9	55	61.1	93
	Secondary school	29	35.8	19	21.1	48
	Primary school	6	7.4	7	7.8	13
	Post-secondary	8	9.9	0	0.0	8
	No formal education	0	0.0	9	10.0	9
Occupation	Farming/livestock/fishing	32	39.5	54	59.3	86
	Trading/business	22	27.2	20	22.0	42
	Skilled trade	15	18.5	5	5.5	20
	Student	4	4.9	3	3.3	7
	Other	8	9.9	9	9.9	17
Years in community	>20 years	57	70.4	46	50.5	103
	11–20 years	18	22.2	29	31.9	47
	5–10 years	4	4.9	11	12.1	15
	<5 years	2	2.5	4	4.4	6

Although males constituted the majority of respondents, reflecting the occupational structure and daytime availability of residents during data collection, the underrepresentation of females should be considered when interpreting gender-related findings.

Knowledge of Blackflies and Onchocerciasis

Table 2 presents knowledge responses by community. Overall, 152 (88.4%) respondents reported having heard about blackflies, and 155 (90.1%) confirmed that blackflies bite in their community. A significantly higher proportion of Tiga respondents confirmed blackfly biting in their community (96.7%) compared to Massu (82.7%) ($\chi^2 = 9.41$, $p = 0.002$). Knowledge of the correct blackfly breeding site (rivers and streams) was reported by 134 (77.9%) respondents overall, with Tiga (84.6%) recording significantly higher correct responses than Massu (70.4%) ($\chi^2 = 5.05$, $p = 0.025$).

Table 2: Knowledge item responses and community comparison (N = 172)

No.	Knowledge Item	All n (%)	Massu n (%)	Tiga n (%)	Chi-square	Sig.
1	Heard about blackflies	152 (88.4)	68 (84.0)	84 (92.3)	$\chi^2=2.91$, $p=0.088$	ns
2	Blackfly bites in community	155 (90.1)	67 (82.7)	88 (96.7)	$\chi^2=9.41$, $p=0.002$	**
3	Breeding site = rivers/streams	134 (77.9)	57 (70.4)	77 (84.6)	$\chi^2=5.05$, $p=0.025$	*
4	Heard of Onchocerciasis (Dundumi)	115 (66.9)	70 (86.4)	45 (49.5)	$\chi^2=26.43$, $p<0.001$	***
5	Correct cause = blackfly bite	45 (26.2)	15 (18.5)	30 (33.0)	$\chi^2=4.63$, $p=0.031$	*
6	Onchocerciasis causes blindness	111 (64.5)	60 (74.1)	51 (56.0)	$\chi^2=6.09$, $p=0.014$	*
7	Can name a correct symptom	94 (54.7)	46 (56.8)	48 (52.7)	$\chi^2=0.28$, $p=0.595$	ns

Note: n (%) = frequency (percentage). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns = not significant. Chi-square tests used for all comparisons.

Attitude Toward Onchocerciasis

Table 3 presents attitude responses by community. The majority of respondents (128; 74.4%) agreed that onchocerciasis is a problem in their community, though this was significantly more pronounced in Tiga (89.0%) than Massu (58.0%) ($\chi^2 = 21.61$, $p < 0.001$). Regarding discrimination, 107 (62.2%) respondents overall held the favourable view that people with onchocerciasis are not discriminated against; this was significantly higher in Massu (70.4%) than Tiga (54.9%) ($\chi^2 = 4.34$, $p = 0.037$). The attitude that people with onchocerciasis should not conceal their condition was held by 143 (83.1%) respondents, and was significantly more prevalent in Tiga (89.0%) than Massu (76.5%) ($\chi^2 = 4.75$, $p = 0.029$).

Table 3: Attitude item responses and community comparison (N = 172)

No.	Attitude Statement	All n (%)	Massu n (%)	Tiga n (%)	Chi-square	Sig.
1	Onchocerciasis is a community problem	128 (74.4)	47 (58.0)	81 (89.0)	$\chi^2=21.61$, $p<0.001$	***
2	People not discriminated against (favourable)	107 (62.2)	57 (70.4)	50 (54.9)	$\chi^2=4.34$, $p=0.037$	*
3	Should not conceal condition	143 (83.1)	62 (76.5)	81 (89.0)	$\chi^2=4.75$, $p=0.029$	*

Note: n (%) = frequency (percentage). * $p < 0.05$; *** $p < 0.001$; ns = not significant.

Practice Related to Blackfly Exposure and Ivermectin Uptake

Table 4 presents practice responses by community. A similar proportion of respondents in both communities reported never visiting rivers or streams (Massu: 17.3%; Tiga: 23.1%; $p = 0.346$), indicating comparable riverine exposure across sites. Use of personal protective measures against blackfly bites was significantly higher in Tiga (53.8%) compared to Massu (13.6%) ($\chi^2 = 30.59$, $p < 0.001$).

A strikingly low proportion of Tiga respondents had ever received ivermectin (Mectizan®) (12; 13.2%), compared to 57 (70.4%) in Massu ($\chi^2 = 58.33$, $p < 0.001$). Similarly, only 12.1% of Tiga respondents reported taking a full dose compared to 65.4% in Massu ($\chi^2 = 52.20$, $p < 0.001$). Despite this, willingness to receive ivermectin in future was equally high in both communities (Massu: 93.8%; Tiga: 92.3%; $p = 0.696$), with 160 (93.0%) respondents overall indicating willingness to accept treatment if offered.

Table 4: Practice item responses and community comparison (N = 172)

No.	Practice Statement	All n (%)	Massu n (%)	Tiga n (%)	Chi-square	Sig.
1	Never visits rivers/streams	35 (20.3)	14 (17.3)	21 (23.1)	$\chi^2=0.89$, $p=0.346$	ns
2	Uses personal protection vs bites	60 (34.9)	11 (13.6)	49 (53.8)	$\chi^2=30.59$, $p<0.001$	***
3	Ever received ivermectin (Mectizan®)	69 (40.1)	57 (70.4)	12 (13.2)	$\chi^2=58.33$, $p<0.001$	***
4	Took full dose of ivermectin	64 (37.2)	53 (65.4)	11 (12.1)	$\chi^2=52.20$, $p<0.001$	***
5	Willing to receive ivermectin in future	160 (93.0)	76 (93.8)	84 (92.3)	$\chi^2=0.15$, $p=0.696$	ns

Note: n (%) = frequency (percentage). * $p < 0.05$; *** $p < 0.001$; ns = not significant.

DISCUSSION

The predominance of male respondents in both communities particularly in Massu (90.0%) is consistent with findings from comparable studies in rural communities in southwestern Nigeria, where men constitute the majority of accessible community members during field surveys (Busari *et al.*, 2022). The predominance of farming as the main occupation (50.0% overall) and the high proportion of long-term residents (60.2% living in communities for over 20 years) are characteristic of riverine endemic communities in Nigeria and indicate sustained exposure to blackfly-infested environments (Surakat *et al.*, 2018).

Awareness of onchocerciasis by its local name "Dundumi" was reported by 115 (66.9%) respondents, but with a marked inter-community difference: 86.4% in Massu versus 49.5% in Tiga ($\chi^2 = 26.43$, $p < 0.001$). Despite this lower disease-name awareness, Tiga respondents showed significantly higher correct attribution of cause to blackfly bites (33.0%) compared to Massu (18.5%) ($\chi^2 = 4.63$, $p = 0.031$). Across both communities, the ability to identify the correct cause of onchocerciasis was very low (26.2% overall), representing the most critical knowledge gap observed in this study. Knowledge that onchocerciasis can lead to blindness was significantly higher among Massu respondents (74.1%) than those in Tiga (56.0%) ($\chi^2 = 6.09$, $p = 0.014$). Ability to name a correct clinical symptom of onchocerciasis was comparable between communities (Massu: 56.8%; Tiga: 52.7%; $p = 0.595$).

The high awareness of blackflies (88.4%) observed in this study compares favourably with 73.3–83.7% reported by Dauda *et al* (2025) in two first-line communities near Erin-Ijesha and Arinta waterfalls in southwest Nigeria. The striking finding that only 26.2% of all respondents correctly identified blackfly bites as the cause of onchocerciasis is, however, consistent with the remarkably low rates of 8.7–10.5% reported by Dauda, *et al* (2025) and 88–89% incorrect cause attribution documented by Busari *et al.*, (2022). This persistent gap between vector awareness and aetiological knowledge indicates that exposure to blackflies is a lived reality for these communities, yet its public health significance remains poorly understood a challenge previously identified in endemic communities in Ogun State (Surakat *et al.*, 2018) and Enugu State (Okafor *et al.*, 2016).

The most consequential finding of this study is the profound disparity in ivermectin receipt between communities: 70.4% in Massu versus only 13.2% in Tiga ($\chi^2 = 58.33$, $p < 0.001$). This contrasts sharply with the 75.7–76.7% uptake documented by Dauda *et al.*, (2025) in well-served communities in Osun and Ekiti States. The near-universal willingness to receive ivermectin in future (Massu: 93.8%; Tiga: 92.3%; $p = 0.696$) unequivocally demonstrates that this gap is a supply-side failure rather than a community refusal problem. The markedly lower ivermectin uptake observed in Tiga is more likely attributable to programme implementation challenges than to poor community acceptance. Although more than 92% of respondents

expressed willingness to receive future treatment, only 13.2% reported having previously taken ivermectin. This discrepancy points to shortcomings in programme implementation, including inefficient drug distribution, insufficient availability of Community Drug Distributors (CDDs), irregular treatment campaigns, and incomplete programme coverage. Comparable operational challenges have been documented in Ogun State (Surakat *et al.*, 2018) and southeastern Nigeria (Griswold *et al.*, 2018), where logistical constraints and attrition among Community Drug Distributors substantially reduced treatment coverage.

The significantly higher use of personal protective measures in Tiga (53.8%) than Massu (13.6%) ($p < 0.001$) likely represents a compensatory community response to the absence of formal treatment. High dose-completion among Massu ivermectin recipients (65.4% full-dose takers out of 70.4% who received) indicates strong community trust in the drug where access exists, consistent with compliance data from Ekpo *et al.*, (2022) across some Nigerian states.

CONCLUSION

This study demonstrates that although awareness of blackflies was relatively high, accurate knowledge of onchocerciasis transmission remained limited in both communities. The marked difference in ivermectin uptake between Massu and Tiga, despite similarly high willingness to receive treatment, suggests that programme delivery, rather than community acceptance, is the principal barrier to effective implementation of community-directed treatment with ivermectin (CDTI). Strengthening drug distribution systems, increasing the number of trained Community Drug Distributors (CDDs), enhancing community health education, and routinely monitoring treatment coverage are essential to improve programme performance and accelerate progress towards the elimination of onchocerciasis in Kano State.

RECOMMENDATION

Future control programmes should prioritise strengthening CDTI logistics, improving community mobilisation, increasing recruitment and retention of Community Drug Distributors, and conducting periodic knowledge, attitude and practice assessments alongside routine treatment coverage evaluations. Integrating epidemiological, entomological and programme-monitoring data will provide stronger evidence for monitoring progress towards interruption of transmission.

LIMITATIONS OF THE STUDY

To minimise social desirability bias, interviews were conducted privately by trained Hausa-speaking research assistants using a standardized interviewer-administered questionnaire. Nevertheless, responses concerning knowledge and treatment history relied on self-report and may have been subject to recall or reporting bias.

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