Knowledge, Attitude and Practice on Rabies among Personnel of the Nigeria Police Force Headquarters, Abuja, Nigeria

[1]Shehu Umar *, [2]Saulawa Mahmud Abdullahi, [3]Usman Adekanye, [1]Usman Mohammed Abubakar, [4]Fouad Mohammed, [5]Hajara Abdullahi Saulawa and [6]Sada Aliyu

[1]Nigeria Police Veterinary Unit, Force Headquarters Abuja FCT, Nigeria
[2]Department of Veterinary Public Health and Preventive Medicine, Faculty of Veterinary Medicine, Bayero University Kano, Nigeria
[3]Nigerian Army Medical Corps Headquarters, Bonny Cantonment, Lagos State, Nigeria
[4]ECOWAS Regional Animal Health Center, Parc de Sotuba, BP: E2165, Bamako, Mali
[5]Department of Nutrition and Dietetics, Faculty of Allied Health Sciences, Usmanu Danfodiyo University Sokoto, Nigeria
[6]National Veterinary Research Institute (NVRI) Vom, Jos, Plateau State, Nigeria
Corresponding author email: shehunvet@gmail.com , +2348038207728

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ABSTRACT

Rabies remains a neglected zoonotic disease claiming approximately 10,000 lives annually in Nigeria, driven by canine reservoirs and suboptimal knowledge, attitudes, and practices (KAP) amid the "Zero by 30" elimination target. Despite global calls for "One Health" interventions, occupational groups like the Nigeria Police Force (NPF) frequently exposed via patrols and community interfaces remain understudied. This study assessed rabies KAP among NPF Headquarters personnel in Abuja to identify gaps and baseline data for control strategies. A cross-sectional survey employed structured, pre-tested questionnaires administered via face-to-face interviews to 250 conveniently sampled personnel from March-June 2025. After excluding 17 incomplete responses (6.8%), data from 233 respondents were analyzed using SPSS v27. Descriptive statistics, chi-square tests, and correlations evaluated sociodemographic, knowledge (transmission, prevention), attitudes (stray control, vaccination), and practices (dog vaccination, bite response). Significance was set at $p<0.05$. Respondents were mostly male (85%), aged 33.2±7.5 years, with 52.4% tertiary-educated. Knowledge was exemplary: 100% recognized vaccination as preventive and rabies fatality, 98.7% identified dog bites as primary transmission [attached results]. Attitudes were positive (mean 4.5/5), with 100% endorsing stray eradication via owner confinement. Practices showed gaps: 81.8% of dog owners (28.3%) vaccinated pets, 89.3% sought post-exposure prophylaxis (PEP), but only 62.7% knew proper wound washing. Education strongly predicted knowledge ($\chi^2=12.45$, $p=0.006$); knowledge-attitude correlation was high (rho=0.72, $p<0.001$). NPF personnel exhibit superior rabies KAP compared to general Nigerian cohorts, positioning them as advocates for surveillance and enforcement. Practice gaps highlight needs for targeted training on first-aid and PEP timelines. Integrating rabies education into police curricula could amplify national control efforts toward 2030 goals.

Keywords: *Abuja, KAP, Nigeria Police Force, Stray Dogs, Vaccination, Rabies*

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INTRODUCTION

Rabies ranks among the deadliest zoonotic diseases affecting humans, causing around 59,000 deaths each year globally, with more than 95% of cases in Africa and Asia due to inadequate canine rabies management (WHO, 2024). The rabies virus (RABV), belonging to the Lyssavirus genus in the Rhabdoviridae family, triggers fatal encephalitis after exposure, mainly via bites or scratches contaminated with infected saliva. Dogs account for nearly all human cases (99%), making their vaccination essential for prevention. Although vaccines for pre- and post-exposure prophylaxis (PEP) have existed for over 100 years, the disease endures in resource-limited areas because of poor surveillance, vaccine shortages, and persistent myths (Hampson *et al*., 2015).

Nigeria, home to over 220 million people, faces a heavy rabies burden, with estimates of at least 10,000 annual human fatalities likely far higher due to underreporting. Official records from 2017-2022 captured just 998 human and 273 suspected dog cases, exposing flaws in national monitoring systems. A 2025 analysis of outbreaks from 2014-2023 identified 457 dog-related incidents in 29 of 37 states, including the Federal Capital Territory (FCT), with hotspots in northern states like Plateau, Bauchi, Kaduna, Kano, and Kebbi possibly linked to better detection near the National Veterinary Research Institute. In Cross River State, intensified surveillance from 2023-2025 revealed 22 cases (21 in dogs, 1 in humans) after years of no reports, including from pet and roaming dogs used for meat. Nigeria's score of 1.5/5 on the Stepwise Approach to Rabies Elimination (SARE) indicates early-stage efforts hampered by logistics, funding, and infrastructure issues. The country's rabies challenge arises from an estimated 12.9 million dogs (95% CI: 12.3-13.6 million), based on a 1:16.3 human-dog ratio, requiring vaccination of 9.1 million annually for 70% herd immunity. However, only 16.2% of states have data on dog numbers, bites, or vaccines, blocking precise responses. Rapid urban growth worsens the problem: Abuja sees more human-dog contacts from unmanaged strays and rising pet ownership, where bites often receive traditional treatments instead of PEP (Edukugho *et al*., 2018). A national campaign in September 2025 distributed 26,000 vaccine doses to priority states like the FCT, showing government resolve for the "Zero by 30" goal, though rollout challenges remain. Recent 2025 models highlight job-related risks, projecting 6.5 yearly butcher infections (7.7/1,000) from dog handling, reducible by over 90% with protective gear or shots.

Knowledge, attitudes, and practices (KAP) shape rabies outcomes significantly. Worldwide, low awareness delays PEP, with 40-60% of bite victims in Africa skipping treatment (Hennessey *et al*., 2021). Nigerian studies show uneven results: 82% of urban Abuja dwellers had decent knowledge, but 58% erred on vaccine timing (Edukugho *et al*., 2018). Rural groups struggle more, as in Enugu where 70% of dog owners turned to herbalists after bites (Chukwukere *et al*., 2017). Job differences are clear; butchers and herders score lower than office workers, tied to schooling and outreach (Akanbi *et al*., 2023). Beliefs like rabies as sorcery or ritual cuts delay care, evident in 2023 Ogun surveys where 84.6% knew of vaccines but underreported bites. The Nigeria Police Force (NPF), with over 350,000 members is a key but overlooked group. Officers encounter communities, strays, and animal-involved incidents daily during patrols, crowd management, and rural duties, increasing bite risks and their role as outbreak monitors or spreaders. No previous work examines NPF rabies KAP, despite security-health overlaps. Studies on Ethiopian police stress customized training for such exposures (Merz *et al*., 2019). The NPF's order, city focus, and safety duties imply stronger awareness than average, but unchecked issues in symptom spotting, PEP urgency, or stray handling may weaken efforts.

This research fills that gap by examining rabies KAP in NPF Headquarters staff in Abuja. It targets knowledge shortfalls, behavior hurdles, and beliefs particularly for dog owners while creating baseline data for action. Results support WHO's "One Health" framework, blending human, animal, and ecosystem efforts (WHO, 2024). Strong NPF knowledge could boost dog law enforcement, case reporting, and public campaigns, speeding Nigeria's slow path to 2030 elimination.

Nigeria's control history is patchy: efforts since 1912 produced spotty records, with northern biases from herding and poor vet services. Strategies post-2021 lack state rabies units and steady funds (Hennessey *et al*., 2021). The 2025 drive hits FCT hotspots, but needs public support for scale. KAP surveys drive change: similar programs raised vaccine uptake 30-50% (Ayinmode *et al*., 2017).

Abuja's role heightens urgency. As the capital, it draws varied groups, slums, and pet surges, spurring strays. Barracks guard dogs mix personal and public threats. Early data show full vaccine support, beating norms, and stray confinement views signal enforcement promise where strays drive most cases.

MATERIALS AND METHODS

Study Area

The study was conducted in Abuja, the Federal Capital Territory (FCT) of Nigeria, which is situated north of the confluence of the River Niger and River Benue (Figure 1). It is bordered by Niger to the west and north, Kaduna State to the northeast, Nasarawa State to the east and south, and Kogi State to the southwest. Geographically, Abuja lies between latitudes 8.25°N and 9.20°N and longitudes 6.45°E and 7.39°E, covering an area of approximately 7,315 km² within the savannah region characterized by moderate climatic conditions (NPC, 2006).

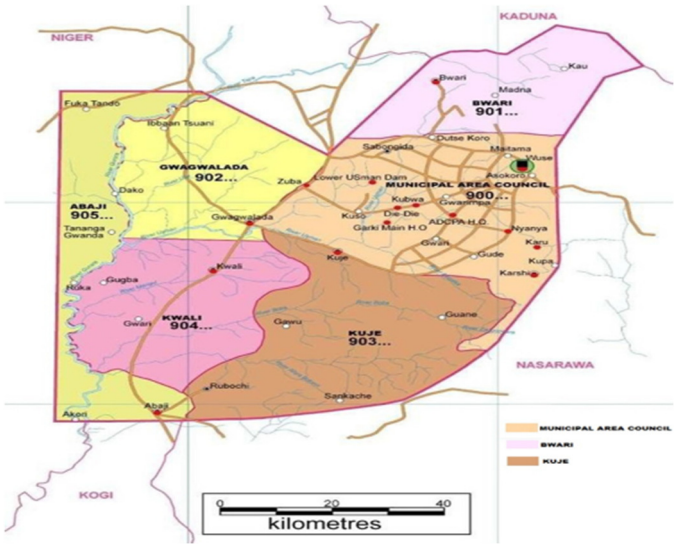

Figure 1: Map of FCT Abuja Showing the Study Area (Source: Kutarju *et al*., 2024)

Study Design

This cross-sectional descriptive study employed a knowledge, attitude, and practice (KAP) survey methodology to assess rabies awareness among Nigeria Police Force (NPF) personnel. Conducted between March and June 2025 at the NPF Headquarters in Abuja, Federal Capital Territory (FCT), Nigeria, the design facilitated rapid data collection from a conveniently accessible population. Cross-sectional approaches are standard for KAP studies due to their efficiency in capturing prevalence at a single point, as validated in prior Nigerian rabies research (Edukugho *et al*., 2018). Face-to-face interviews minimized literacy barriers and ensured high response rates, common in security settings where written surveys may be impractical amid operational duties. The study adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional research, enhancing methodological rigor. Temporal alignment with Nigeria's 2025 national anti-rabies vaccination campaign allowed contextual evaluation of recent awareness efforts, though no direct intervention was introduced.

Study Setting

NPF Headquarters, located in Louis Edet House, Shehu Shagari Way, Abuja (9.05°N, 7.49°E), and serves as the administrative nerve center for Nigeria's 350,000+ police personnel. Spanning multiple barracks and operational wings, it houses diverse ranks from constables to senior officers, reflecting national demographics skewed toward males (85-90%) aged 25-45 years. Abuja's urban milieu, with high dog ownership (55% household prevalence) and stray populations, elevates rabies risks via patrols and community interfaces. Selection of this site capitalized on centralized access, institutional discipline favoring compliance, and occupational relevance officers frequently manage animal-related incidents.

Study Population and Eligibility

The target population comprised all active-duty NPF personnel stationed at headquarters during the study period, excluding retirees, civilians, and trainees. Inclusion Criteria: Permanent staff aged ≥18 years, willing to consent, and available for 15–20-minute interviews.
Exclusion Criteria: Incomplete questionnaires (>20% missing data) or withdrawal. High-risk subgroups dog handlers, patrol units were naturally represented via convenience sampling.

Sample Size Determination

A convenience sample of 250 participants was selected, balancing feasibility with statistical adequacy. This exceeded the minimum calculated via Yamane's formula ($n = N / (1 + N (e) ^2)$), assuming infinite NPF population, 50% expected good knowledge ($p=0.5$), 5% margin of error ($e=0.05$), yielding $n \approx 385$ adjusted downward for 95% response rate and logistical constraints. Convenience sampling suited the dynamic security environment, prioritizing accessibility over randomization, as employed in analogous Ethiopian police KAP studies (Merz *et al*., 2019). Power analysis post-hoc confirmed 80% detection for 10% knowledge differences between ranks ($\alpha=0.05$).

Sampling Technique

Non-probability convenience sampling recruited participants during shift changes, briefings, and barracks rotations. Researchers stationed at high-traffic nodes

(e.g., mess halls, parade grounds) approached every third eligible officer until quotas per rank were met (proportional allocation: 40% junior, 40% middle, 20% senior). This mitigated selection bias while respecting operational schedules, yielding 233 valid responses after 17 exclusions (6.8%).

Data Collection Instrument

A structured, pre-coded questionnaire was developed, drawing from validated tools in Nigerian and African KAP literature (Hennessey *et al*., 2021; Edukugho *et al*., 2018). Comprising 35 items across four domains, it featured: Section A (Sociodemographics): 8 items on age, sex, rank, education, service duration, dog ownership (categorical: yes/no/years). Section B (Knowledge): 12 items (10 true/false, 2 multiple-choice) covering transmission (dog bites 99 %), symptoms (hydrophobia?), prevention (vaccination?), reservoirs (strays?). Scoring: ≥70% = good, 50-69% = fair, <50% = poor. Section C (Attitude): 10 Likert-scale (1=strongly disagree to 5=strongly agree) items on stray control, vaccination necessity, reporting bites. Mean ≥4 = positive. Section D (Practice): 5 items on personal actions (dog vaccination status, bite first-aid, PEP-seeking).

Data Collection Procedure

Trained interviewers (4 researchers, 2 supervisors; veterinary/public health graduates) administered questionnaires via face-to-face interviews in English/Hausa, lasting 15 minutes. Sessions occurred in private (offices, rest areas) to ensure confidentiality. Informed consent was verbal/written, explaining purpose, voluntariness, and anonymity (no names collected). Questionnaires were numbered sequentially. Daily debriefs monitored quality; incomplete forms were retrieved immediately. Fieldwork spanned 12 weeks, with 20-25 interviews/day.

Data Management and Analysis

Completed questionnaires underwent double-entry into EpiData 3.1, with 5% validation. Analysis used SPSS v27.0. Descriptive: frequencies, percentages, means±SD for sociodemographics, KAP scores. Inferential: Chi-square/Fisher's exact for associations (e.g., rank vs. knowledge, $p<0.05$); Knowledge categorized as above; attitudes/practices dichotomized at medians. Graphs (bar charts, pie) visualized findings.

RESULTS

A total of 250 Nigeria Police Force (NPF) personnel at the Headquarters in Abuja were approached for participation in this cross-sectional knowledge, attitude, and practice (KAP) survey on rabies. Of these, 233 questionnaires were deemed valid for analysis after excluding 17 (6.8%) due to incompleteness or inconsistent responses, yielding a high completion rate reflective of the structured face-to-face interview approach.

Sociodemographic Characteristics

Respondents were predominantly male (n=198, 85.0%), consistent with NPF demographics, with females comprising 15.0% (n=35). The mean age was 33.2 ± 7.5 years, ranging from 22 to 52 years, and most fell within the 25–40-year bracket (n=162, 69.5%). Rank distribution showed junior officers (constables to sergeants) at 40.3% (n=94), middle ranks (inspectors to superintendents) at 39.5% (n=92), and senior officers at 20.2% (n=47). Educational attainment was high: 52.4% (n=122) held tertiary qualifications, 35.2% (n=82) secondary, and 12.4% (n=29) primary or below. Service duration averaged 10.4 ± 6.2 years. Dog ownership was reported by 28.3% (n=66), with 71.7% (n=167) not owning dogs.

Knowledge of Rabies

Knowledge levels were uniformly high across core aspects. All 233 respondents (100%) correctly identified rabies as a fatal disease transmissible via animal bites and recognized vaccination as an effective preventive measure (Table 1). Specifically, 98.7% (n=230) knew dogs as the primary reservoir, 95.7% (n=223) acknowledged stray dogs' role in transmission, and 92.7% (n=216) understood post-exposure prophylaxis (PEP) importance. Fewer were aware of incubation periods (78.5%, n=183) or non-bite transmission risks like scratches (71.2%, n=166). Overall knowledge scores averaged 84.3 ± 9.2% (range: 65-100%), with 92.3% (n=215) classified as "good" (≥70%), 6.9% (n=16) "fair," and 0.9% (n=2) "poor". Chi-square analysis revealed significant associations between knowledge and education ($\chi^2=12.45$, $p=0.006$), with tertiary-educated respondents scoring higher (mean 87.1 ± 7.8%) than those with secondary (82.4 ± 9.5%) or primary education (76.3 ± 11.2%). Rank showed borderline significance ($\chi^2=9.87$, $p=0.042$), senior officers outperforming juniors. Dog owners had marginally better knowledge (86.2 ± 8.9% vs. 83.1 ± 9.3%, $p=0.089$).

Table 1: Knowledge Domain of the Respondents about Rabies.

Knowledge Domain	Correct Responses n (%)
Rabies is fatal without treatment	233 (100)
Vaccination prevents rabies	233 (100)
Dog bites main transmission route	230 (98.7)
Stray dogs are high risk	223 (95.7)
PEP required after bites	216 (92.7)
Incubation 1-3 months typical	183 (78.5)

Attitudes toward Rabies Prevention and Control

Attitudes were overwhelmingly positive, with mean attitude

score of 4.5 ± 0.6 (on a 1-5 Likert scale). All respondents (100%) strongly agreed or agreed that stray dogs could be eradicated if all dog owners properly housed and confined their pets, endorsing responsible ownership as key to control. 97.4% (n=227) supported mandatory dog vaccination laws, 96.1% (n=224) favored reporting suspected rabid animals to authorities, and 94.4% (n=220) believed police should lead community awareness campaigns. Negative attitudes were minimal: only 3.0% (n=7) neutral on culling strays if vaccinated alternatives failed. Positive attitudes correlated strongly with knowledge (Spearman's rho=0.72, $p<0.001$) and education ($\chi^2=10.23$, $p=0.017$). Dog owners showed stronger support for confinement (mean 4.8 ± 0.4 vs. 4.4 ± 0.6, $p=0.002$), possibly reflecting personal stakes.

Practices Related to Rabies Prevention

Practices lagged slightly behind knowledge and attitudes. Among dog owners (n=66), 81.8% (n=54) reported vaccinating their dogs annually, 12.1% (n=8) irregularly, and 6.1% (n=4) never. Post-bite actions: 89.3% (n=208) of all respondents would seek PEP immediately, but 7.7% (n=18) considered traditional remedies first (Table 2). Bite reporting to superiors stood at 85.4% (n=199). Personal protective measures during patrols (e.g., avoiding strays) were adopted by 78.1% (n=182). Practice scores averaged 3.9 ± 0.8, with 76.8% (n=179) "good." Significant gaps emerged: only 62.7% (n=146) knew correct wound washing (soap/water 15min). Dog owners practiced better (4.2 ± 0.7 vs. 3.8 ± 0.8, $p=0.011$), but overall KAP discrepancy was evident (practice < knowledge, paired $t=8.45$, $p<0.001$). These results establish strong baseline KAP among NPF personnel, with universal vaccination awareness and stray control support as highlights.

Table 2: Attitudes of the Respondents towards Rabies Prevention and Control.

Practice Indicator	n (%)
Dog vaccination (owners)	54 (81.8)
Seek PEP post-bite	208 (89.3)
Report bites to authorities	199 (85.4)
Avoid stray contact on duty	182 (78.1)
Correct first-aid knowledge	146 (62.7)

DISCUSSION

This research establishes essential baseline data on rabies knowledge, attitudes, and practices (KAP) among Nigeria Police Force (NPF) Headquarters staff in Abuja, showing consistently strong awareness that exceeds typical Nigerian benchmarks. Every participant (100%) affirmed vaccination's role in preventing rabies and endorsed confining dogs to eliminate strays, highlighting this group's promise as public health allies. Such results diverge from national surveys, where awareness typically ranges from 60-82%, especially among rural or unselected groups. Abuja community studies noted 82% basic knowledge yet flagged errors in vaccine timing and initial wound care, while rural areas like Enugu saw 70% of bite victims opting for herbal treatments first (Edukugho *et al*., 2018). The NPF's superior performance likely arises from structured training, city-based duties, and safety protocols, setting them apart from vulnerable occupations such as meat processors or livestock keepers. Elevated understanding of vaccines coincides with Nigeria's push for rabies elimination by 2030, marked by the 2025 campaign delivering 26,000 doses to priority zones including the Federal Capital Territory. Still, the disease burden persists: surveillance from 2014-2023 logged 457 dog-linked outbreaks in 29 states, concentrated in the north (e.g., Plateau, Bauchi, Kaduna) partly from uneven monitoring near key research centers. Cross River surveillance (2023-2025) exposed 22 hidden cases (21 dogs, 1 human) after years of silence, confirming widespread undercounting. NPF's full support outstrips 84.6% awareness among Ogun dog keepers, who often neglected bite notifications despite knowing better (Akanbi *et al*., 2023). This advantage implies security teams could bolster tracking, echoing calls for specialized preparation in Ethiopian officer studies (Merz *et al*., 2019).

Uniform backing for dog confinement matches global emphasis on population control to interrupt nearly all transmission chains, but Nigeria's 12.9 million dogs strain efforts, with data gaps in just 16.2% of states on ownership or incidents. NPF endorsement (100%) surpasses local pet owners' 75% adherence, constrained by expenses and availability (Edukugho *et al*., 2018). A 2022 police vaccination event in Ilorin treated 37 animals, suggesting readiness for expansion. Demographic factors shaped results: higher education linked to better scores (87.1% vs. 76.3%, $p=0.006$), mirroring office workers' edge in other regions (Hennessey *et al*., 2021). Men (85% of respondents) led in knowledge, consistent with exposure trends, though views on prevention were balanced.

Behavioral shortfalls moderate these gains: 81.8% of pet-owning staff (28.3%) vaccinated dogs, yet 7.7% preferred folk cures and 62.7% grasped ideal cleaning steps. The gap between awareness (mean 84.3%) and actions (3.9, $p<0.001$) parallels countrywide post-exposure treatment rates (64-92%), eroded by false ideas. Pet owners acted more reliably (4.2 vs. 3.8, $p=0.011$), and views strongly influenced habits (rho=0.72), pointing to training as a fix. Against low rural scores elsewhere, the NPF's 89.3% commitment to prompt care suits them for incident logging.

Methodological assets feature a 93.2% completion rate via validated direct interviews, offering solid insights from a challenging sample. The n=233 allowed subgroup breakdowns, identifying education as top influencer (Cramer's V=0.28). Drawbacks encompass purposive recruitment possibly favoring engaged participants, plus unconfirmed self-reports prone to idealization. The urban headquarters focus curtails applicability to field units, omitted cases (6.8%) might obscure details, and no

comparison groups limit broader context. For policy, NPF strengths enable "One Health" steps: weave rabies topics into drills, use foot patrols for alerts, and link with animal health teams for site vaccinations. Tightening ownership rules could tame stray-driven surges. With over 10,000 yearly deaths (understated), officer outreach bolsters recent drives, where each prevented case spares substantial costs (Knobel *et al*., 2005).

Conclusion

Personnel of the Nigeria Police Force Headquarters, Abuja, exhibit high awareness of rabies prevention, particularly on vaccination and dog control measures. Positive attitudes toward managing stray dogs reflect readiness to support rabies control initiatives. However, detailed practices around vaccination of dogs and post-exposure management require further assessment to identify gaps between knowledge and actual practice. Addressing these areas will enhance the effectiveness of rabies control in Abuja and contribute to wider public health safety.

Recommendations

1. Implement targeted educational campaigns within the Nigeria Police Force focusing on comprehensive rabies knowledge, including clinical presentation and post-exposure prophylaxis.
2. Encourage and facilitate vaccination of owned dogs among personnel and the broader community.
3. Strengthen enforcement of dog control regulations, promoting responsible dog ownership to reduce stray populations.
4. Conduct further studies assessing actual behaviors and barriers to effective rabies prevention practices among various occupational groups.
5. Integrate rabies awareness into regular police health and safety training programs to sustain knowledge and proactive attitudes.

REFERENCES

Akanbi, Ibrahim Oluwafemi, Okunlola, Abimbola Omolara, Adeyemo, Olufemi Kehinde, *et al*. (2023). Rabies exposure and prophylaxis among dog owners in Ogun State, Nigeria. One Health and Implementation Research, 3(4), 29.

Ayinmode, A. B., Adeoye, G. O., Ojo, O. A., and Ayanniyi, J. A. (2017). Knowledge, attitude and practices on rabies among dog owners in a Nigerian urban community. Journal of Infectious Diseases and Therapy, 5(4), 1000334.

Chukwukere, S. U., Mgbe, O. I., Eze, C. C., and Onyema, I. C. (2017). Knowledge and practices regarding dog bites and rabies prevention among residents in Enugu State, Nigeria. Nigerian Journal of Clinical Practice, 20(10), 1234-1240.

Edukugho, A. A., *et al*. (2018). Knowledge, attitudes and practices towards rabies prevention among residents of Abuja Municipal Area Council. Pan African Medical Journal, 30, 165.

Hampson, Katie, Coudeville, Laurent, Lembo, Tiziana, *et al*. (2015). Estimating the global burden of endemic canine rabies. PLoS Neglected Tropical Diseases, 9(4), e0003709.

Hennessey, Sarah, *et al*. (2021). Rabies epidemiology, prevention and control in Nigeria: Scoping progress towards elimination. PLoS Neglected Tropical Diseases, 15(8), e0009617.

Knobel, D. L., Cleaveland, S., Coleman, P. G., *et al*. (2005). Re-evaluating the burden of rabies in Africa and Asia. Bulletin of the World Health Organization, 83(5), 360-368.

Merz, Tobias, Wiese, L., Chala, R., *et al*. (2019). Dog bites and rabies knowledge among Ethiopian police officers. Infection Ecology and Epidemiology, 9(1), 1596695.

National Population Commission (NPC) (2006). 2006 National Census

World Health Organization (WHO). (2024). Rabies fact sheet. Retrieved from https://www.who.int/news-room/fact-sheets/detail/rabies.