

Rabies Knowledge and Prevention Practices in Gombe State: A Community-Based Comparative Cross-Sectional Study of Rabies Hotspot and Non-Hotspot Areas

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Respondents in rabies hotspot areas of Gombe State had **better knowledge of rabies but poorer prevention practices** compared to non-hotspot areas. Predictors of good prevention practices in hotspot areas included being younger having a non-farming occupation and possessing good overall knowledge. In non-hotspot areas, occupation (specifically **being a farmer**) was a predictor of poorer prevention practices

BACKGROUND

- What are the differences in rabies knowledge and prevention practices among community members in rabies hotspot areas compared to non-hotspot areas in Gombe State, Nigeria?

Rabies is a public health issue in Nigeria, particularly in some rural settings designated as hotspot areas, as seen in Gombe State. The disease, mainly transmitted through dog bites, poses a significant threat due to limited awareness and preventive measures among community members. This study sought to assess and compare the knowledge and prevention practices related to rabies in both hotspot and non-hotspot areas and identify the predictors of good practices

METHODS

- Study Area: Gombe State, Nigeria in rabies hotspots and non-hotspot areas. Hotspot areas – LGAs with rabid dog bite cases. Non-hotspot – LGAs with no rabid dog bite cases in 2020 - 2022
- Study design: Comparative cross-sectional
- Study population: Dog and/or cat owners in selected communities
- Inclusion criteria: Adults ≥18 years residing in the community for ≥1 year. Exclusion criteria: Too ill to participate

$$n = \frac{DEFF \times (Z\alpha + Z\beta)^2 \times (p1q1 + p2q2)}{(p1 - p2)^2}$$

- Sample size was 816 respondents (408 in each study arm)
- Multistage sampling technique – LGA, Community and Households
- Stage 1: LGAs - 2 per zone (1 hotspot, 1 non-hotspot). Stage 2: Communities - 10 wards all randomly selected. The 3 largest communities were chosen. Stage 4: Households-starting from the centre, we followed cardinal directions, & interviewed dog owners
- Trained research assistants. Digital interviewer-administered questionnaire utilised
- Univariate, bivariate and multivariate analysis done at p < 0.05

RESULTS

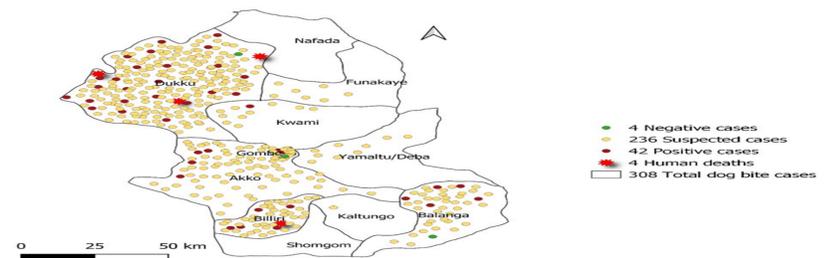
- Respondents from both arms differed significantly based on age, sex, marital status, occupation, ethnic group and income (p<0.05)
- For knowledge assessment, the groups differed significantly based on the items “ever heard of rabies”, “causes of rabies”, “transmission of rabies”, “prevention of rabies” (p < 0.05)

Table 1 Rabies Prevention Practices in Hotspot and Non-Hotspot

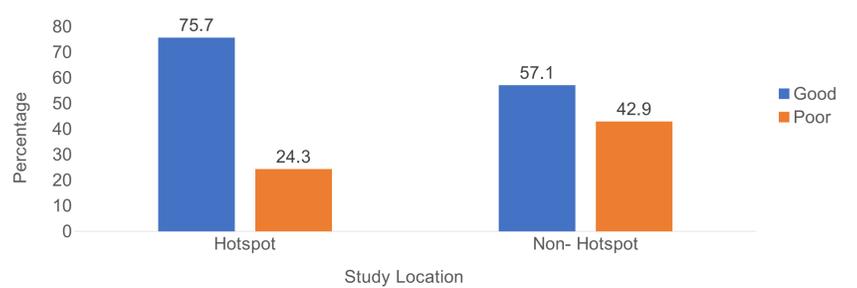
Variables	Hotspot	Non- Hotspot	χ^2	p-Value
Dogs/cats confined				<0.000
Yes	165(40.4)	112(27.5)	15.352	1*
No	243(59.6)	296(72.5)		
Dogs vaccinated in the last 1 year				
Yes	109(26.7)	72(17.6)	9.719	0.002*
No	299(73.3)	336(82.4)		

RESULTS CONTINUED

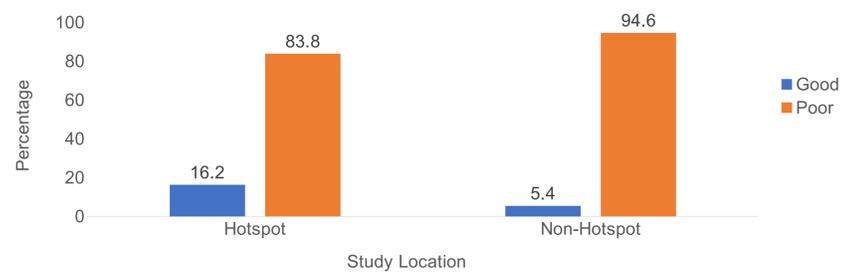
Map showing Hotspot and Non-hotspot Areas in Gombe, Nigeria



Overall Knowledge of Rabies in Hotspot and Non-Hotspot Areas of Gombe, Nigeria



Overall Rabies Prevention Practices in Hotspot and Non-Hotspot Areas in Gombe, Nigeria



Predictors of Good Rabies Prevention Practices	Hotspot AOR (CI)	Non-Hotspot AOR (CI)
Older age	0.47 (0.27-0.84)	
Farmers	0.48 (0.27-0.84)	0.30(0.12-0.80)
Overall knowledge	0.30 (0.12-0.80)	

CONCLUSIONS

This comparative assessment of rabies knowledge and prevention practices demonstrated better overall rabies knowledge that did not translate to preventive practices in the hotspot areas. The age, occupation and overall rabies knowledge of the community members were identified as predictors of rabies prevention practice. Targeted educational and behavioural change programmes should be instituted

ADDITIONAL KEY INFORMATION

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Nil conflict of interest declared

