

Ophidiophobia in Kaltungo: Verbal Information, Social Learning or Evolutionary

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ABSTRACT:

Snakes are one of the most common subjects of extreme fear and phobia among human beings. The medical term for fear of snake is ophidiophobia. It can cause a person to have extreme high level of fear and anxiety. This research was conducted to ascertain the reasons and causes of ophidiophobia about Kaltungo, whether it is due to verbal information, social learning or evolutionary. The study was conducted in Kaltungo town where the north-eastern snakebite treatment and research center is located. The study population consists of school children of various primary and secondary schools within the town, students of higher schools of learning as well as other members of the town who were either born in the town or migrated but are staying in Kaltungo. The procedure for data collection was questionnaire survey research, so a qualitative research method was used. The study reveals that Kaltungo harbors varieties of snakes. It shows that those with the fear of snake experience in Kaltungo have the tendency of having Ophidiophobia. Ophidiophobia is prevalent in Kaltungo, and the impression and fear people have about snakes in the town is as a result of the information people acquire on social media or warnings from loved ones, as well as hearing about other people's experiences. Hence, we conclude that ophidiophobia in Kaltungo is caused by verbal information and social learning.

KEYWORDS: Ophidiophobia, verbal information, social learning, evolutionary, Kaltungo, snakes

I. INTRODUCTION

Snakes are one of the most common feared creatures among human beings. Other subhuman creatures have been equally reported to have ferocious fearful responses towards snakes.

The reason for humans' fear of snakes is an old, yet unresolved debate, (Je're'mie & Fabien, 2016).

The medical term for a fear of snakes is ophidiophobia, which is a form of specific phobia. A specific phobia is a type of anxiety disorder that affects approximately 3-15% of people around the world, (William, et al, 2018). It can cause a person to have an extreme high level of fear and anxiety. Ophidiophobia is a specific phobia that cause a person to avoid certain routes or situations where the object of the phobia might be encountered (American Psychiatric Association, 2013).

Some people fear snakes due to their bad experiences with snakes. A fear of snakes or ophidiophobia is a common phobia that people develop as a result of their previous negative experiences with snake or seeing other people react fearfully to snake. (Samra & Abdijadid, 2021).

It is natural for a person to fear snake. But if ophidiophobics encounter a snake, they may experience anxiety and panic attack. People with ophidiophobia primarily avoid the objects of their irrational fear by contacts, discussions or imagery under normal circumstances. Thus, they can live a normal life. However, ophidiophobia can affect a person's normal life especially when they have to deny themselves enjoyments and recreations by avoiding hiking, camping and picnics for fear of having an encounter with a snake (Nicole, 2022). According to the United Kingdom's National Health Service (NHS, 2022), the symptoms of panic attack include trembling, sweating, chills, shortness of breath and rapid heartbeat.

Researchers suggest that a fear of snake is a common phobia that can cause a person to avoid places where he or she might encounter a snake. (Chandan et al, 2024)

(LoBue and Adolph, 2019), examined the reaction of children to common fears. The authors suggest two methods that can result in a person developing a phobia. They include verbal information and social learning. Other authors believe ophidiophobia is evolutionary.

How people get to learn about the sensitivity of snakes in Kaltungo has not been explored and holds the motivation to my current study of snake phobia. More researches have been done focusing on snakebite, and incidence of snakebite in Kaltungo. However, no research has studied a fear of snake (ophidiophobia) which is a common phenomenon in this region of our society. Hence, the study helps to fill this research gap by investigating a fear of snake in Kaltungo. The research gap was addressed by assuming that ophidiophobia in Kaltungo is caused by verbal information and that the impression and fear people have about snakes in the town is as a result of the information people acquire on social media or warnings from loved ones or trusted adults (Sarah, 2024). However, the research was conducted to investigate the causes of ophidiophobia among the people of Kaltungo whether it is otherwise social learning or evolutionary.

Kaltungo is the headquarters of Kaltungo local government in Gombe State. It is located in $9^{\circ}49'N11^{\circ}19'E$ in the Sudan savannah, north-eastern Nigeria. It is a beautiful landscape with horseshoe of hills and mountains surrounding the town. It is a growing cosmopolitan semi-urban town surrounded closely by rural areas. This rocky and hilly terrain is known to possess so much snakes with carpet viper being the dominant specie.

The semi-urban region is growing rapidly in population with the presence of government facilities. The latest one, being federal polytechnic, whose activity took off in 2021. Even with the presence of these facilities people fear to settle in the town for fear of snakebite. It is such a place which when mentioned, people begin to panic. Many strangers and youth corpors alike have rejected to settle in Kaltungo for fear of snakes. Although, many studies have been carried out in the region such as the "Predictors of depression among patients receiving treatment for snakebite in General hospital, Kaltungo" (Abdulaziz, et al, 2017), "Posttraumatic stress disorder and psychosocial impairment following snakebite in north-eastern Nigeria" (Zaharaddeen et al 2020), "Factors affecting snakebite mortality in the north-eastern Nigeria" (Habib and Abubakar 2010), "Effect of distance and delay in access to care on outcome of snakebite in rural north-eastern Nigeria" (Iliyasu, et al 2015), among others.

However, the study of ophidiophobia which is a common phobia in the area has not been documented in literature. The fear can result in one's change of routines or being afraid to go out to avoid coming across a snake.

The reason why people fear snake in Kaltungo, and sometimes refuse to visit the beautiful hilly town is not yet known. However, this research is conducted to ascertain the reasons and causes of ophidiophobia among the people of Kaltungo whether it is due to verbal information, social learning or evolutionary. It also investigates the prevalence of ophidiophobia in the area and to correct the snakebite assertion visitors have about Kaltungo town.

Objectives of the Research

The objective of this study is to explore the underlying causes of ophidiophobia among the people of Kaltungo, examining whether it is primarily influenced by verbal information, social learning, or evolutionary factors

- i. To evaluate the causes of ophidiophobia in Kaltungo town
- ii. To examine the prevalence of ophidiophobia in Kaltungo town

RESEARCH HYPOTHESES

Hypothesis 1

(H₀): Verbal information does not significantly influence the development of ophidiophobia in Kaltungo

(H₁): Verbal information significantly influences the development of ophidiophobia in Kaltungo

Null Hypothesis 2

(H₀): Social Learning does not significantly influence the development of ophidiophobia in Kaltungo

(H₁): Social Learning significantly influences the development of ophidiophobia in Kaltungo

Null Hypothesis 3

(H₀): Evolutionary factor does not significantly influence the development of ophidiophobia in Kaltungo

(H₁): Evolutionary factor significantly influences the development of ophidiophobia in Kaltungo

II. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Verbal Information: This is the method that a person acquires the fear through social media or warnings from guardians or trusted adults. Vanessa

& Karen examined fear in infancy and found that fear could be transmitted into children through negative verbal information by parents, friend or media (Vanessa & Karen, 2019).

2.1.2 Social Learning: This is the method that individual develop fears by hearing about other people's experiences or by observing other people's fearful reactions. Research have posited that social learning such as observing a caregiver's fearful response could induce fear in children (Vanessa & Karen, 2019). Parental anxiety can equally induce fear in children according to some research. Lebowitz et al, (2016) argued that children's observance of their parents' fears of certain situations can trigger fear in children.

2.1.3 Evolutionary psychology

This is the idea that ophidiophobia is an adaptive survival system inherited from ancestors. Research have supported the evolutionary argument of fear of snakes in humans. According to researchers, snake phobia in human is evolutionary, and that humans develop fear against snake's ancestral threats (Stefanie et al, 2017, Joshua & Tamsin, 2015). Some research has posited that there is a correlation between snake threat and the evolution of the primate brain (Quan, et al, 2013)

2.1.4 Phobia: Is an irrational fear of something that can lead to avoidance of the object of one's fear. The fear of snake is called ophidiophobia

However, researchers suggest that humans develop an adaptive system of fear due to evolutionary influence that pythons had on people in the past (Andras, et al, 2023)

Researchers suggest that early primates developed an aversion to harmful triangular-shaped object in the form of teeth, claws or spikes. Many venomous snakes have triangular head shape or exhibit zizag pattern of movement. According to Je're'mie and Fabien (2016), babies and young people do not fear snakes. However, they have a strong tendency to learn to fear them. This could be due to bad experiences or negative portrayals of snakes in society.

Ophidiophobia is an extreme fear of snakes. Many people are afraid of snakes, but those with ophidiophobia have an extreme or irrational amount of fear. Snakes often represent threat or danger. Thus, a fear of snakes is worth studying. The threat of snakes has a significant impact on how the brains of primates evolved (Quan Van Le, 2013). Fear of snakes is very common. Half the people in the world feel anxious about snakes. Only 2% to 3% of those who are afraid of snakes may be

having ophidiophobia, where the fear is so extreme, it starts to interfere with their life or sense of well-being (Dan Brennan 2021). A person with ophidiophobia may experience health issues. According to (Andras, 2018 as cited in Sarah Charmley 2022), phobias have associations with migraine, heart problems, and arthritis and thyroid conditions. Snake phobia is one of the most common anxiety disorders (see Polak et al, 2020, LeBeau et al., 2010). Ophidiophobia is prevalent. It is believed to affect about 2-3% of the population (see Pola'k et al., 2016). This accounts for as much as half of all animal phobias (Eaton et al., 2018). Humans are believed to have many fears. But the fear of snakes or ophidiophobia is the second most common phobia in the world. This is because according to (Jacob Olesen, 2022) nearly 1/3rd of adult humans is believed to have an intense fear of snakes. Jacob argued that the major reason why man fears snake is myths and the fact that snakes are deadly and venomous.

In the life of humanity, man's survival is constantly threatened by danger. Research have shown that over an evolutionary time, humans possess an adaptive fear mechanism they use to detect the threats posed by snake. (David, 2018). According to the study of The Malicious Serpent by Ohman and Mineka (2003), snake fear is prevalent among humans and other primates. They concluded that fear of snake automatically activates fear module in the brain. Humans and other primates possess an evolved fear mechanism for snake and spider (see Ohman & Mineka, 2001, Flykt, & Esteves, 2001). Previous studies have revealed that humans and non-human creatures have rapid fear for snakes than for mushrooms and flowers (David H. Rakison, 2009). According to David, females but not male infants learn rapidly to associate negative facial emotions with fear-relevant stimuli. Fear of these non-human creatures is common in adults and children (Fredrikson et al, 1996). They argued that women are four times more likely to fear snakes than men (Fredrikson et al, 2006). Researches have shown that infants associate snakes with fear because of the length of their body (DeLoache & Lobue, 2009).

Melanie (2019) opined that ophidiophobia gets worsen as snake interactions grow higher Melanie argued that negative experiences, learned behaviors, portrayal in media, and negative experiences are some of the causes of ophidiophobia.

According to authors, due to the threats by snakes, human ancestors developed a complex adaptive system of fear responses expressed in the brain module of fear (Ohman 2001). It has been

suggested that humans are not born with a fear of snakes though, people may have natural inclination to associate them with fear (Silvie et al., 2020, Thrasher and Lobue 2016), see (Hoehl et al., 2017). Recent studies have shown that besides fear, disgust is also associated with certain snakes (see Uetz et al., Janovcova' et al., Pola'k et al., Radlova' et al., 2019).

So far most of the research on ophidiophobia have focused on evolutionary causes of ophidiophobia and learned behaviours. Snakebite menace has equally been well researched in literature. However, less work has been done on the prevalence and causes of snake phobia which is the subject of this review. As many people seek to reject dwelling in this beautiful landscape of Kaltungo with horseshoe of hills and mountains, the epidemiological aspect of this review will concentrate on sample-based data focusing on prevalence, and causes of ophidiophobia.

III. METHODOLOGY

The study employs both quantitative and qualitative methods. This procedure will ensure a comprehensive investigation of factors contributing to ophidiophobia in Kaltungo. The study focuses on three primary factors: verbal information, social learning, and evolutionary influences.

3.1 Study Area

The study was conducted in Kaltungo town a region known for its high incidence of snakes, and where the north-eastern snakebite reference center is located.

3.2 Study Population

The study population consist of school children of various primary and secondary schools within the town, students of higher schools of learning as well as other members of the town who

were either born here or migrated but are staying in Kaltungo town

3.3 Study Instrument

A structural interviewer administered questionnaire was used to gather social-demographic information from the study participants. The procedure for data collection was questionnaire survey research, so a qualitative research method was used. The questionnaires were administered to school children and data collection assistants were employed from among their teachers to guide them on how to fill the forms. Questionnaires were also administered to farmers, traders, worshippers at various worship centers and other members of the public at various locations to assess the prevalence and intensity of ophidiophobia among the residents of Kaltungo. The questionnaire includes sections on:

Verbal Information: Questions were asked regarding the exposure to stories about Kaltungo snakes or warning about snakes.

Social Learning: Questions were asked about other people's reactions to snakes or hearing about other people's experiences with snakes.

Evolutionary Influences: Questions were asked to investigate inborn fears or ancestral knowledge related to snakes

3.4 Analytical Technique

The data collected from questionnaire were analysed using SPSS. Descriptive statistics were used to summarize the prevalence and intensity of ophidiophobia while inferential statistics: chi-square were used to show the relationship between snake phobia (ophidiophobia) and the three factors: verbal information, social learning and evolutionary.

IV. RESULTS AND DISCUSSION

Table 1: Demographic characteristics

Age of respondent			
		Frequency	Percent
Valid	15-20 YEARS	20	9.5
	10-15 YEARS	83	39.5
	5-10 YEARS	88	41.9
	UNDER YEARS	5 19	9.0

Total 210 100.0

Sex of respondent

		Frequency	Percent
Valid	FEMALE	60	28.6
	MALE	150	71.4
	Total	210	100.0

Marital status of respondent

		Frequency	Percent
Valid	MARRIED	34	16.2
	SINGLE	176	83.8
	Total	210	100.0

Educational level of respondent

		Frequency	Percent
Valid	X	3	1.4
	OTHERS	8	3.8
	TERTIARY	31	14.8
	SECONDARY	62	29.5
	primary	106	50.5
	Total	210	100.0

Occupation

		Frequency	Percent
Valid	OTHERS	18	8.6
	FARMER	11	5.2
	TRADER	8	3.8
	CIVIL/PUBLIC SERVANT	1	.5
	STUDENT	172	81.9
	Total	210	100.0

Where is your place of birth?

		Frequency	Percent
Valid	OTHERS	64	30.5
	KALTUNGO	146	69.5
	Total	210	100.0

If you were not born in Kaltungo, how long have you been living in Kaltungo?

		Frequency	Percent
Valid	X	42	20.0
	D	74	35.2
	3-5 YEARS	53	25.2
	LESS THAN 1 YEAR	41	19.5
	Total	210	100.0

Source: Field Survey (2024)

Table 1 shows that the respondents within the age range of 15-20 years are 20 representing 9.5%, those within 10-15 years are 83 representing 39.5%, those within 5-10 years are 88 representing 41.9%, and the respondents under 5 years are 19 representing 9%. The respondents that are female are 60, representing 28.6%, while the respondents that are male are 150, representing 71.4%. The respondents with married status are 34 representing 16.2%, while those with single status are 176 representing 83.8%. The respondents with primary education are 106, representing 50.5%; respondents with secondary education are 62, representing 29.5%; respondents with tertiary education are 31, representing 14.8%; others are 8 representing 3.8%; and respondents denoted with X are 3

representing 1.4%. The occupational status of respondents in the student category is 172, representing 81.9%; the civil/public servant category is 1 representing 0.5%; the trader category is 8 representing 3.8%; the farmer category is 11 representing 5.2%; and others are 18 representing 8.6%. Besides, respondents whose place of birth is Kaltungo are 146, representing 69.5%, while others whose birth is not Kaltungo are 64, representing 30.5%. Additionally, the respondents who were not born in Kaltungo but have been living in Kaltungo for less than 1 year are 41, representing 19.5%; those residing in Kaltungo within 3-5 years are 53, representing 25.2%; and those with undefined years denoted with X and D are 42 and 74, representing 20% and 35.2%, respectively.

Table 2: Perception about snakes in Kaltungo
Have you ever seen a snake in Kaltungo?

		Frequency	Percent
Valid	NO	31	14.8
	YES	179	85.2
	Total	210	100.0

Where did you see snake in Kaltungo?

		Frequency	Percent
Valid	X	3	1.4
	OTHERS	28	13.3
	IN THE FARM	35	16.7
	AT THE MARKET	10	4.8
	ON THE ROAD	21	10.0

AT SCHOOL	48	22.9
AT HOME	65	31.0
Total	210	100.0

Do you believe there are varieties of snakes in Kaltungo?

		Frequency	Percent
Valid	X	1	.5
	NO	12	5.7
	YES	197	93.8
	Total	210	100.0

How did you learn about snakes in Kaltungo?

		Frequency	Percent
Valid	VERBAL INFORMATION	142	67.6
	SOCIAL LEARNING	68	32.4
	Total	210	100.0

Do you have fear of snake in Kaltungo?

		Frequency	Percent
Valid	NO	46	21.9
	YES	164	78.1
	Total	210	100

Table 2 indicates that respondents who have seen a snake in Kaltungo are 179, representing 85.2%, while the respondents who don't see a snake in Kaltungo are 31, representing 14.8%. Meanwhile, those who see a snake at home in Kaltungo are 65, representing 31%; those who see a snake at school in Kaltungo are 48, representing 22.9%; those who see a snake at the market in Kaltungo are 10 representing 4.8%; those that see a snake on the road in Kaltungo are 21 representing 10%; those that see snake at the farm in Kaltungo are 35, representing 16.7%; others that see snake in Kaltungo are 28, representing 13.3%; and the respondents denoted with X that see snakes in Kaltungo are 3 representing 1.4%. More so, those who believe that there are varieties of snakes

in Kaltungo are 197, representing 93.8%; those who believe otherwise are 12; representing 5.7%; and the respondent denoted with X who doesn't respond is 1; representing 0.5%. Additionally, the respondents who learn about snakes in Kaltungo through verbal information are 142, representing 67.6%, while those that learn about the snakes in Kaltungo via social learning are 68, representing 32.4%, indicating that ophidiophobia is caused by verbal information. However, those who have a fear of snakes in Kaltungo 164, representing 78.1%, while those who do not have a fear of snakes in Kaltungo are 46, representing 21.9%, indicating that the prevalence of ophidiophobia in Kaltungo is 78.1% because ophidiophobia is a medical term that indicates the fear of snake.

Table 3: Why do you fear snake? * Have you seen anybody bitten by snake before?

Chi-Square Tests			
	Value	df	P-value
Pearson Chi-Square	15.892 ^a	4	.003
Likelihood Ratio	16.141	4	.003
Linear-by-Linear Association	2.396	1	.122
No of Valid Cases	192		

Sources: Author's computation using SPSS 24

Table 3 shows that the Pearson Chi-square ($\chi^2 = 15.892$, $P = 0.003 < 0.05$) indicate that we reject the null hypothesis at 5% level, indicating that why people fear snake is significantly

associated with the experiences of seeing people bitten by snake before. Therefore, those that have seen anybody bitten by snakes before have the tendency of having Ophidiophobia.

Table 4: Why do you fear snake? * Do you have fear of snake in Kaltungo?

Chi-Square Tests			
	Value	df	P-value
Pearson Chi-Square	39.880 ^a	4	.000
Likelihood Ratio	44.550	4	.000
Linear-by-Linear Association	.092	1	.762
No of Valid Cases	191		

Sources: Author's computation using SPSS 24

Table 4 shows that the Pearson Chi-square ($\chi^2 = 39.880$, $P = 0.000 < 0.05$) indicate that we reject the null hypothesis at 5% level, indicating that why people fear snake is significantly

associated with other people that have the fear of snake in Kaltungo, suggesting that those with the fear of snake experience in Kaltungo have the tendency of having Ophidiophobia.

Table 5: Why do you fear snake? * Do you believe there are varieties of snakes in Kaltungo?

Chi-Square Tests			
	Value	df	P-value
Pearson Chi-Square	6.761 ^a	8	.563
Likelihood Ratio	7.078	8	.528
Linear-by-Linear Association	1.968	1	.161
No of Valid Cases	192		

Sources: Author's computation using SPSS 24

Table 5 shows that the Pearson Chi-square ($\chi^2 = 6.761$, $P = 0.563 > 0.05$) indicate that we do not reject the null hypothesis at 5% level,

suggesting that why people fear snakes is not significantly related with the believe that there are varieties of snakes in Kaltungo

Table 6: Why do you fear snake? * How did you learn about snakes in Kaltungo?

Chi-Square Tests			
	Value	df	P-value
Pearson Chi-Square	10.554 ^a	4	.032
Likelihood Ratio	10.633	4	.031
Linear-by-Linear Association	5.651	1	.017
N of Valid Cases	192		

Table 6 shows that the Pearson Chi-square ($\chi^2 = 10.554$, $P = 0.032 < 0.05$) indicate that the null hypothesis was reject at 5% level, indicating that why people fear snake is significantly associated

with how they learn about snake in Kaltungo, which align with the fact that the respondents that learn about snakes in Kaltungo through verbal information are 142 representing 67.6% while

those that learn about the snakes in Kaltungo via social learning are 68 representing 32.4%, indicating that Ophidiophobia is caused by verbal information.

Figure 1 also demonstrated that people learn more about snakes in Kaltungo via verbal information than the social learning.

V. DISCUSSION OF FINDINGS

The study shows that although snakes are prevalent in Kaltungo, ophidiophobia is not caused by the presence of varieties of snakes in the town. Ophidiophobia is 78% prevalent and that both Verbal Information and Social Learning are the cause of ophidiophobia in Kaltungo. However, the influence of verbal information (67%) is higher than that of social learning (32%). Generally, why people fear snakes is significantly associated with how they learn about snakes, which align with the fact that respondents have learnt about snakes in Kaltungo through other people's experiences and on social media. Hence, ophidiophobia is influenced by verbal information and social learning.

VI. CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The fear of living and encountering snake has been a subject of discussion in Kaltungo. People believe that in Kaltungo man and snake live together and cohabit. This is the reason people fear to visit Kaltungo. The study supports the assertion that there are varieties of snakes in Kaltungo. It reveals that those with the fear of snake experience in Kaltungo have the tendency of having Ophidiophobia. Ophidiophobia is prevalent in Kaltungo and is caused by verbal information. This supports the study of Vanessa LoBue and Karen. Hence, the study concludes that ophidiophobia in Kaltungo is caused by verbal information and social learning and that the impression and fear people have about snakes in the town is as a result of the information people acquire on social media or warnings from loved ones, as well as hearing about other people's experiences.

6.2 RECOMMENDATIONS

1. We recommend that community awareness programs should be organized by the local community to address the role of verbal information in spreading fear of snakes. These awareness programs could provide accurate information about snakes, highlighting the difference between venomous and non-venomous snakes, rather than reinforcing fears through

negative stories. This could reduce the snake phobia induced by the media.

2. Incorporating ophidiophobia awareness in the school curriculum, teaching students phobia and the safe ways to interact with snakes can mitigate the effect of verbal information and social learning.

3. We recommend that future studies should focus on interventions aimed at reducing ophidiophobia by tracking how media portray snakes in Kaltungo town.

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