
Research Article

Lived Experiences and Quality of Life of Snake Envenoming Survivors in Rural Areas in The Province of Camarines Sur

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Abstract:

Snake envenomation is a critical yet often neglected public health threat in rural communities, where limited access to medical care and reliance on traditional practices complicate timely treatment. This qualitative study explored the lived experiences and quality of life of eight survivors in rural Camarines Sur, Philippines, using a descriptive phenomenological approach. In-depth interviews conducted from January to March 2025 revealed four major themes: Circumstances of Envenomation, highlighting the sudden and unpredictable nature of snakebites in high-risk environments and the persistence of unsafe cultural remedies; Physical and Functional Recovery, describing varied recovery outcomes, prolonged disability, and altered work roles; Psychosocial and Emotional Impact, showing trauma, anxiety, survivor's gratitude, and distress from lost provider roles; and Support System and Coping, emphasizing the central role of family caregiving, spiritual reliance, and inconsistent community aid. The findings confirm that snakebite is not only a medical emergency but a life-altering event with long-term physical, emotional, and socioeconomic consequences. Survivors rely heavily on familial and spiritual support but face gaps in rehabilitation, emergency response, and psychosocial care. A culturally sensitive targeted intervention plan was proposed to address these challenges, focusing on community education, improved access to healthcare and antivenom, trauma-informed support, and livelihood recovery. This study underscores the need for holistic and community-centered responses to snake envenomation, especially in underserved rural regions.

Keywords: Snake Envenomation, Quality of Life, Lived Experiences, Snakebite.

Introduction

From ancient peril to modern crisis, snake envenomation remains a silent yet deadly threat that strikes without warning. Often underestimated, its consequence become all too real when the emergency room doors swing open, revealing the brutal reality. In those critical moments, nurses become the lifelines, responding swiftly against a ticking clock. Yet, the repercussions of snakebites stretch far beyond the hospital walls. Moving beyond the immediate crisis in the emergency room, this research journeys into the homes and hearts of snake envenomation survivors, to understand the enduring impact on their quality of life.

Recognized as a neglected tropical disease by the World Health Organization (WHO) in 2017, snakebite signifies a noteworthy global burden. Annually, snake envenomation affects between 1.8 and 2.7 million people worldwide, resulting in over 100,000 deaths and leaving countless survivors with long-term disabilities, amputations, and psychological trauma. The statistics demonstrate that snakebite represents both a medical crisis and a major public health issue according to the World Health Organization (WHO, 2023).

In Southeast Asia, the incidence of snakebite remains alarmingly high, posing a critical public health challenge that requires urgent attention. With a staggering estimated 78,000 to 470,000 cases occur yearly, disproportionately affecting rural people who work in farming, and other agricultural and other land-based livelihoods. This particular region in Asia continues to struggle with persistent challenges in antivenom access due to insufficient production capacity, limited investment, and difficulties in distribution (Patikorn et al., 2022).

In the Philippines, snake envenomation persists as a serious public health threat, particularly in the underserved and agricultural regions. The country reports an estimated 13,377 cases and 550 deaths each year, with the Philippine cobra (*Naja philippinensis*) identified as one of the most common and dangerous species (Paghubasan, 2023). In Region 8, Eastern Visayas, the Department of Health recorded 486 snakebite cases over the past three years: 168 cases in 2022, 226 cases in 2023, and 92 cases from January to April 2024. Tragically, the Department of Health also reported seven deaths during this period (Meniano, 2024), reflecting both the urgency of treatment and the limitations of local healthcare systems.

Locally, the province of Camarines Sur, located in the Bicol Region, is another high-risk area for snakebite incidents. With its lush vegetation and the prevalence of subsistence farming, unfortunately also means that many individuals face daily exposure to venomous snakes as they work their land. The Bicol Medical Center records an alarmingly high number of snakebite cases annually, ranging from 45 to 76 incidents. In 2020 alone, the hospital documented 65 admissions related to snakebites, of which 27 cases presented clinical signs of envenomation and 4 resulted in fatalities. In 2021, there were 42 recorded cases, 29 of which involved

envenomation, sadly, with a total of 3 deaths reported, including a 9-year-old child (Froyalde, 2022).

While much research concentrates on the immediate medical crisis of snake envenomation, the long-term consequences for survivors, particularly in rural areas like Camarines Sur with constrained healthcare access, remain a significant concern. The comprehensive impact of snake envenomation is still not well-understood due to limited research, underscoring its status as a neglected tropical disease. The effects of envenomation are also geographically variable, influenced by the prevalent snake species. Critically, physical examinations alone are inadequate for evaluating these long-term health outcomes (Arias-Rodriguez et al., 2020; Kasturiratne et al., 2021).

The felt need of this study stemmed from the persistently high incidence of snakebites in Camarines Sur. As of March 2025, the Bicol Medical Center Poison Control Center has recorded 22 snakebite incidents for this quarter alone, compared to 23 total snakebite incidents in 2024, signaling a rising trend and emphasizing the urgent need for targeted public health action. Snake envenomation survivors may experience significant changes in their everyday lives especially in rural settings where their lives usually revolve in subsistence farming and close interactions with the natural environment. The impact of how snake envenomation affects survivors' physical health together with their mental state and social relationships remains unclear.

This study aimed to investigate this gap in research by focusing on the lived experiences and quality of life of snake envenomation survivors in the province of Camarines Sur. By investigating the multidimensional concept of health, this research seeks to reveal the experiences of survivors and highlight the long-term challenges they face in their long-term recovery. Understanding these challenges is crucial for improving healthcare services, patient care, and support systems in the province and in similar rural areas across the country.

Purpose of the Study

This qualitative study sought to thoroughly explore the lived experiences and the quality of life of individuals who survived snake envenomation in rural areas of Camarines Sur, shedding light on how these individuals cope with the aftermath of snake envenomation, and formulating recommendations to improve the management of snake envenomation in the province.

Statement of the Problem

This study focused on the lived experiences of survivors, especially how it shaped their quality of life. Specifically, this research answered the following:

1. Explore the lived experiences and quality of life of individuals who have survived snake envenomation in the rural areas of Camarines Sur.
2. Propose a plan to improve the quality of life of snake envenomation survivors.

Methodology

This chapter focused on how the study was conducted. It included the research design, research approach, research locale, participants of the study, procedure in gathering information, narrative reflections and ethical consideration.

Research Locale

This research was conducted in rural areas within the province of Camarines Sur as shown in Plate 1, located in the Bicol region of the Philippines. As of the 2020 Census, the province's land area was 5,511.90 square kilometers (2,128.16 square miles), with a population of 2,068,244. This population constitutes 34.01% of the entire Bicol Region, 3.33% of the Luzon Island group, and 1.90% of the Philippines' total population. The population density is 375 persons per square kilometer (972 people per square mile) (PhilAtlas, 2024).

Camarines Sur comprises two cities, Naga City and Iriga City, and numerous municipalities: Bao, Balatan, Bato, Bombon, Buhi, Bula, Cabusao, Calabanga, Camaligan, Canaman, Caramoan, Del Gallego, Gainza, Garchitorena, Goa, Lagonoy, Libmanan, Lupi, Magarao, Milaor, Minalabac, Nabua, Ocampo, Pamplona, Pasacao, Pili (the capital town), Presentacion (Parubcan), Ragay, Sagnay, San Fernando, San Jose, Sipocot, Siruma, Tigaon, and Tinambac. This study focused on participants residing in rural areas of Camarines Sur, including



Plate 1. Locale of the Study

those living in rural areas within Naga City and Iriga City. Urban areas within the cities were excluded. Camarines Sur's predominantly agricultural landscape, particularly in the rural areas, increases the likelihood of interactions between local populations and venomous snakes. The rural nature of these areas often results in limited access to healthcare services, making them an ideal setting for exploring the challenges faced by survivors of snake envenomation. Rural communities in Camarines Sur, including those within the cities that are designated as rural, are typically characterized by tight-knit social structures, with residents primarily engaged in farming or fishing. These areas also have limited access to modern medical facilities, which can significantly affect the speed and effectiveness of medical treatment for snakebites. This research specifically focused on participants from rural municipalities and rural areas within the cities that are known for a high incidence of snakebite cases.

Research Design

This study employed a qualitative research design grounded in descriptive phenomenology to explore and interpret the lived experiences and quality of individuals who have survived snake envenomation in rural areas of Camarines Sur. A qualitative design was chosen because it allowed for an in-depth exploration and understanding of participants' subjective realities, capturing the complexities and nuances of their emotional, psychological, social, and environmental experiences (Tenny et al., 2022). This approach is particularly suited to exploring personal perceptions and meanings attributed by survivors to significant life events such as snakebite. This design allowed for an in-depth exploration of participants' subjective experiences, emotions, and perceptions, which are central to understanding the complex and multi-dimensional impact of snake envenomation on their quality of life.

Data were collected through in-depth, semi-structured interviews, enabling participants to freely share their experiences, emotions, coping mechanisms, and perceived impacts of the snakebite incident. Thematic analysis was employed to systematically analyze the collected qualitative data, identifying recurring patterns and themes (Naeem et al., 2023). This methodological combination ensured both a holistic understanding of each survivor's unique experiences and the identification of commonalities across participants.

By focusing on the narratives of snake envenoming survivors, this study aims to understand not just what happened to them, but also how they experienced it, how they made sense of it, and how it continues to shape their lives and their perceptions of their well-being. The emphasis is on the unfolding of their experiences over time, including the initial incident, the treatment-seeking process, the recovery period, and the long-term impacts on their physical, psychological, social, and economic lives. To ensure the trustworthiness of the findings derived from these narratives, a peer review process will be conducted, and reflexive journaling will be utilized throughout the research process to document the researcher's assumptions and interpretations, ensuring transparency and

minimizing potential bias.

Research Approach

This study utilized a descriptive phenomenological approach, as described by Creswell (2018), to capture the essence of the lived experiences of snake envenomation survivors and perceived quality of life among snake envenomation survivors in rural areas of Camarines Sur. Descriptive phenomenology emphasizes capturing detailed, first-hand descriptions of participants' experiences, typically gathered through in-depth, semi-structured interviews, and seeks to uncover the core meanings participants attribute to these experiences (Sundler et al., 2019). These descriptions provided a foundation for systematically analyzing and interpreting recurring patterns or themes within the context of participants' social, cultural, and personal environments.

The primary objective of the phenomenological approach was not merely to describe the events surrounding snake envenomation but also to interpret and reveal deeper meanings that survivors ascribed to their experiences, particularly in relation to their quality of life. Phenomenology is widely recognized in recent literature as especially suited to studies focused on subjective experiences of significant life events such as trauma, illness, and recovery, as it emphasizes capturing participants' lived realities authentically and thoroughly (Lindseth & Norberg, 2022).

Thematic analysis was employed as the primary analytic method for this study. Thematic analysis is particularly compatible with phenomenological research due to its structured and rigorous process for identifying, analyzing, and reporting patterns (themes) within qualitative data (Naeem et al., 2023). Utilizing this approach allowed the researcher to systematically explore participants' subjective experiences, emotions, perceptions, and coping mechanisms, facilitating a nuanced and comprehensive understanding of the complex and multi-dimensional impacts of snake envenomation on their quality of life. Through thematic analysis, recurring patterns, common themes, and shared meanings across participants' narratives were clearly identified, organized, and presented.

To enhance the trustworthiness and rigor of the findings, several recommended qualitative research strategies were implemented. A peer review process was conducted, in which preliminary themes and representative data excerpts were shared with other qualitative researchers for validation and feedback, ensuring interpretative accuracy and analytic credibility (Korstjens & Moser, 2018). Furthermore, reflexive journaling was maintained consistently throughout the research process to document the researcher's reflections, methodological decisions, assumptions, and interpretative insights. Reflexivity is acknowledged as an essential practice in qualitative research to maintain transparency, acknowledge researcher positionality, and minimize potential biases (Dodgson, 2019).

Participants of the Study

The participants for this study comprised of eight (8) snake envenomation survivors residing in rural areas of Camarines Sur. Given the study's focus on personal experiences and quality of life, the participants were required to be adults capable of reflecting on their experiences. The inclusion criteria were snake envenomation survivors who had sought treatment at a tertiary hospital between 2015 and 2022 (within the past 3 to 10 years). This timeframe was chosen to ensure the study focused on the long-term impacts and quality of life of survivors beyond the acute phase of recovery, allowing for a deeper understanding of their adaptation and resilience.

Participants were recruited through three primary methods: word of mouth, referrals from health professionals, and identification by community leaders. Initial participants were recruited through existing networks and connections within the rural communities, and they were asked to share information about the study with other potential participants. Health professionals (e.g., nurses, doctors, barangay health workers) working in rural health units and hospitals treating snake envenomation cases were also approached and asked to identify potential participants. Similarly, community leaders (e.g., barangay captains, elders, religious leaders) were informed about the study and asked to identify potential participants. Crucially, health professionals and community leaders only shared the contact information of potential participants after obtaining their explicit consent. Participants were informed that they were under no obligation to participate and that their decision would not affect their medical care or standing within the community. Snowball sampling was employed to select participants who could provide rich, detailed insights into the experience of surviving snake envenomation. Researchers typically begin by leveraging their social networks to form initial connections, allowing the participant pool to grow progressively through referrals. Sampling continues until either the desired sample size is achieved or data saturation is reached (Parker et al., 2020). This approach is consistent with qualitative research, which often seeks a depth of understanding from a smaller, more focused sample when participants are hard to find (Stewart, 2023).

Before the interview, the researcher thoroughly explained the data gathering procedures and their rights as participants. All participants were required to be willing to share their personal experiences, undergo in-depth interviews, and provide informed consent. To ensure confidentiality, participant names were anonymized, and all data was stored securely. The researcher also acknowledged the potential for sensitive information to arise during interviews and assured participants that they could withdraw at any time.

Procedure for Gathering Information

The procedure for gathering information followed a systematic approach to ensure the study captured the richness of the participants'

lived experiences. The primary method of data collection was in-depth, semi-structured interviews. The researcher-initiated contact with the participants. Contact information was provided by the participants themselves or by a third party, with the participants' explicit consent. A text message was sent to confirm availability, and upon confirmation, a home visit was arranged based on the participants' preferred date and time. Participants were also offered the option to choose an alternative interview location if they preferred not to conduct it at their home. Prior to the interview, the researcher thoroughly explained the study's purpose, procedures, and confidentiality measures. Participants were asked to sign a written informed consent form.

Each participant was interviewed individually in a private setting that was comfortable and convenient for them. The interviews were semi-structured, utilizing an interview guide with open-ended questions to guide the discussion, while also allowing for flexibility to explore emergent topics (Roslin et al, 2022). The interview guide was developed based on the research questions and theoretical framework. The interviews focused on the following topics: participant demographics, the snakebite incident, physical and emotional experiences of survival, perceived impact on quality of life (including physical, psychological, social, and economic dimensions), coping strategies and support systems, experiences with healthcare access (including barriers and challenges), and the impact on social relationships and daily activities.

The interviews were audio-recorded with participant permission and transcribed verbatim. In addition to the interviews, the researcher took field notes during each interview to capture non-verbal cues, emotional responses, and contextual information. These observations provided additional insights into the participants' experiences. The researcher also engaged in reflexive journaling throughout the data collection process, documenting personal thoughts and reactions, and actively working to suspend their influence on the research.

The researcher continued to conduct interviews until data saturation was reached, meaning no new themes or insights emerged. Saturation was determined through constant comparison and reflexive analysis, where emerging themes were continuously compared and contrasted across interviews. To enhance the trustworthiness of the findings, a peer review process was conducted, where the final themes and supporting data are shared with other researchers for feedback on their interpretations and validity. This external review served as a valuable check, offering alternative perspectives, challenging assumptions, and ensuring that the conclusions drawn were well-supported by the evidence and represented a credible understanding of the participants' experiences. This collaborative approach enhances the dependability and confirmability of the research findings, increasing confidence in the accuracy and meaningfulness of the insights generated.

Analytical Framework

This qualitative study employed thematic analysis to identify, analyze, and report recurring patterns (themes) within the participants' lived experiences, focusing on their subjective interpretations. The primary data source consisted of in-depth, semi-structured participant interviews, supplemented by audio recordings, field notes, and documentary analysis. These qualitative data collection methods generated rich, narrative data that formed the basis of the analysis. The analytical process began with the meticulous transcription of the interviews, followed by a rigorous process of coding, categorizing, and theme development, allowing for a comprehensive exploration of the diverse perspectives and experiences of snake envenomation survivors as seen in Figure 2. Specifically, the study utilized thematic analysis, informed by recent advancements in its application and an emphasis on rigorous trustworthiness criteria (Nowell et al., 2021). This ensured that the identified themes were robust, accurately reflected participants' viewpoints, and were grounded in the data. To further enhance trustworthiness, a peer review process was conducted, where the final themes and supporting data were shared with other researchers for feedback on their interpretations and validity. The researcher also maintained a reflexive journal throughout the process, documenting assumptions and interpretations to enhance transparency.

The analytical paradigm illustrates a qualitative data analysis model,

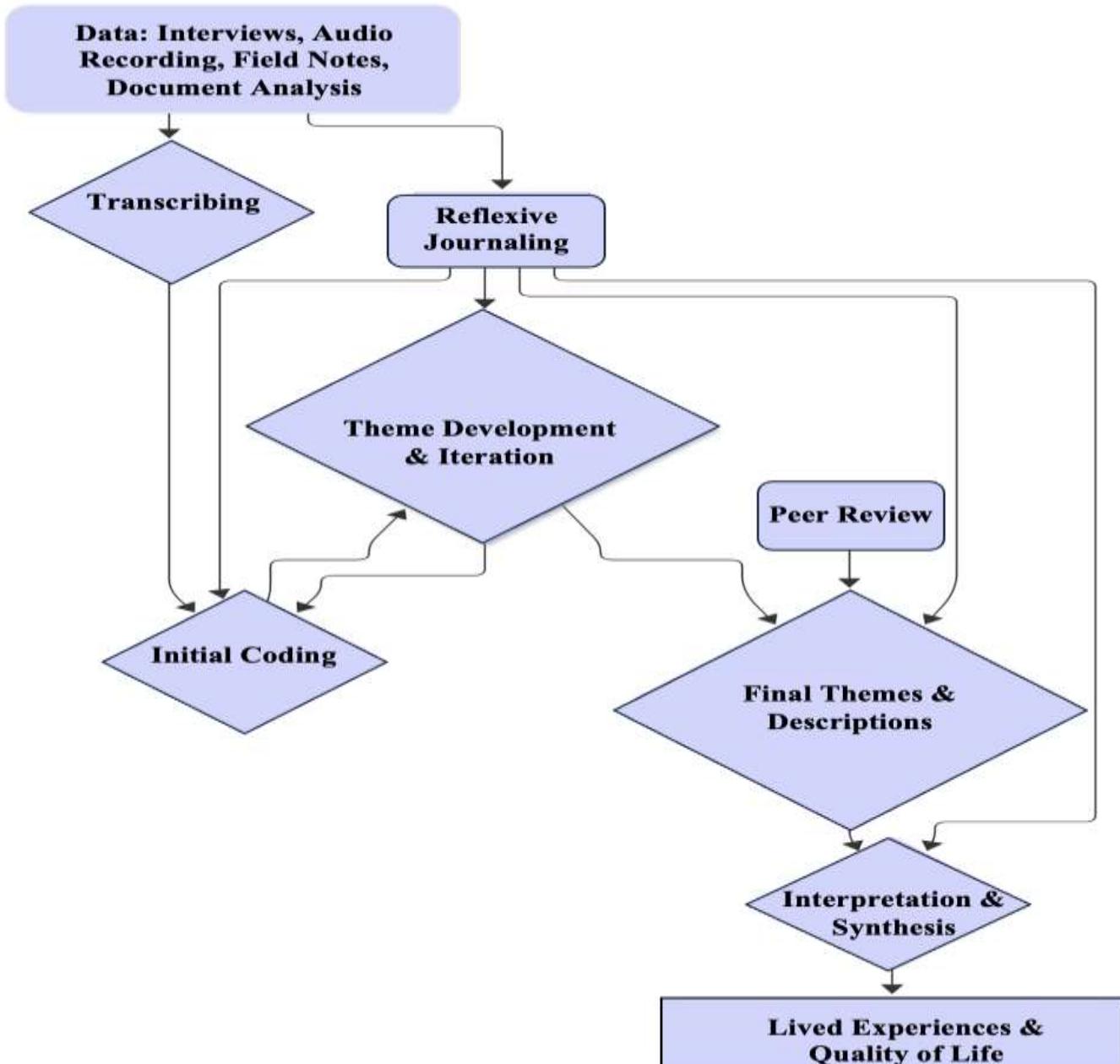


Figure 2. Analytical Paradigm

specifically designed for thematic analysis, with a strong emphasis on reflexivity and peer review. The process begins with the raw qualitative data, encompassing participant interviews, audio recordings, field notes, and document analysis. This data is then subjected to Transcribing, where audio recordings are converted into written text, making them accessible for detailed analysis.

Running parallel to this is Reflexive Journaling, a continuous and dynamic process where the researcher documents their assumptions, biases, and interpretations throughout the analysis. This journaling influences every key stage, from Initial Coding, where data segments are labeled to identify patterns, to Theme Development and Iteration, a cyclical process of grouping codes into broader themes and refining them. The iterative nature of theme development is highlighted by the loop between these two stages. Once the themes are finalized in the Final Themes & Descriptions stage, they undergo Peer Review, where other researchers provide feedback and validation, ensuring the trustworthiness of the findings.

Finally, the themes are contextualized and interpreted in the Interpretation and Synthesis stage, leading to the Findings: Lived Experience and Quality of Life, which represents the nuanced understanding of the participants' experiences. The arrows throughout the flowchart demonstrate the sequential flow of information, the iterative nature of theme development, and the pervasive influence of reflexive journaling, all contributing to a rigorous and credible analysis.

Narrative Reflection

The researcher's role in a qualitative study is not only to collect data but also to engage with participants and their stories in a way that respects their experiences. The research demanded not only deep reflections on the part of the researcher but also cultural

sensitivity, empathy, and respect for the participants' dignity and privacy.

While the study focused on understanding the challenges faced by snake envenoming survivors, it also acknowledged the resilience and strength many participants demonstrated in overcoming adversity. The researcher anticipated that the study would not only provide insight into the struggles faced by survivors but also offer a nuanced understanding of their recovery processes, resilience, and the importance of community and healthcare support. The research proved to be a profound and humbling experience. It transcended mere academic inquiry, evolving into a poignant exploration of human resilience against the backdrop of rural vulnerability. Stepping into remote barangays, where the verdant landscape concealed hidden dangers, the researcher encountered not tales of despair, but stories of unwavering strength and quiet determination to rebuild lives shattered by venomous encounters. Initially, the researcher approached the study with a clinical lens, focusing on the quantifiable impacts of snake envenomation, the physical disabilities, economic burdens, and psychological scars. However, as the researcher sat with each survivor and listened to their narratives, the data points transformed into faces, voices, and lived realities. One participant, his feet still bearing the marks of the bite, recounted his arduous journey to the nearest health center, a journey that took hours simply to obtain treatment. His story illuminated not just the issue of delayed care but also the broader realities of inaccessible healthcare, geographic isolation, and the sheer grit required for survival.

The psychological toll was equally profound. Survivors spoke of fear, nightmares, and lingering anxiety, constant companions in their daily lives. One participant, a farmer, described his fear of returning to the fields, the very source of his livelihood. Trauma had woven itself into the fabric of his existence, creating a persistent tension between survival and the ever-present threat of another encounter. What struck the researcher most was the resilience the survivors displayed. Despite physical limitations and emotional scars, they found ways to adapt, to cope, and to rebuild their lives. They relied on their families, their communities, and their faith. They found strength in shared experiences and in the knowledge that they were not alone in their struggles. This research was not merely about documenting suffering; it became an act of witnessing the indomitable spirit of human beings who refused to be defined by trauma.

The research process itself served as a lesson in humility. It challenged preconceived notions about rural life and the challenges faced by marginalized communities. It underscored the importance of listening, of truly hearing the stories of those whose voices were often unheard. It reinforced the understanding that research was not solely about data collection, it was about building relationships, fostering trust, and giving voice to the voiceless. This journey has left an indelible mark for it has deepened the understanding of the complex interplay between health, poverty, and resilience. It has reinforced the commitment to advocating for equitable healthcare access and support for vulnerable populations. And most importantly, it has reminded of the extraordinary strength of the human spirit, a strength that shines brightest in the face of adversity. This research has been more than a study, it has been a testament to the enduring power of hope and the unwavering spirit of survival.

Embarking on this qualitative exploration of snake envenomation survivors in rural Camarines Sur was a deeply transformative experience, fraught with both challenges and profound insights. Balancing the demands of emergency room work with the rigorous schedule of data collection proved to be a constant negotiation, often requiring late-night transcriptions and weekend interviews. Yet, the personal experiences gained from conducting home visits in extremely remote areas were invaluable. Traversing rice fields under the scorching heat, crossing precarious bamboo bridges, and enduring hours of travel revealed the true resilience of the participants and the stark realities of their daily lives. The constant presence of stray dogs and the ever-present fear of encountering snakes, given the study's focus, added layers of emotional complexity to the process. These firsthand encounters significantly shaped my understanding of the research topic, highlighting the profound impact of geographical isolation and limited healthcare access on the survivors' quality of life.

Analyzing the data through thematic analysis, guided by reflexive journaling and peer review, was a testament to the power of qualitative inquiry. Reflexivity, while demanding, allowed me to acknowledge and mitigate my own biases, ensuring that the participants' voices remained central to the findings. The peer review process provided invaluable external validation, strengthening the credibility of the themes and interpretations. The findings, which illuminated the long-term physical, emotional, and socioeconomic challenges faced by survivors, have significant implications for healthcare policy and community support systems in similar rural settings.

Ethical considerations were paramount throughout the research. Obtaining informed consent in remote communities, ensuring participant confidentiality, and navigating cultural sensitivities required meticulous planning and constant vigilance. The study underscored the importance of culturally competent research practices and the need to prioritize participant well-being. Ultimately, this research journey, with its inherent challenges and profound insights, has not only contributed to a deeper understanding of snake envenomation survivorship but has also enriched my own perspective as a researcher, highlighting the transformative power of qualitative inquiry in illuminating the lived realities of marginalized populations.

Ethical Consideration

The ethical considerations in this qualitative research, which focused on the lived experiences and quality of life of snake envenomating survivors in rural Camarines Sur, were crucial for ensuring the well-being and respect of participants. A fundamental aspect of this research was obtaining informed consent, which was given voluntarily and accompanied by a clear explanation of the

study's purpose, methods, and potential risks and benefits, communicated in a language that participants could easily understand, likely Bicolano or Tagalog. Special care was taken to document this consent, particularly in cases where literacy posed a challenge, potentially requiring alternative methods such as witnessed oral consent.

Maintaining strict confidentiality and anonymity was essential, necessitating the use of pseudonyms and secure data storage to protect participants' identities. The researcher was particularly mindful of the risk of re-traumatization during interviews, employing sensitive questioning techniques and being ready to provide referrals to support services. Additionally, cultural sensitivity was vital, requiring a deep respect for local customs, beliefs, and traditional healing practices that may significantly shape participants' experiences and viewpoints.

Recognizing the inherent power dynamics between researchers and participants, efforts were made to empower participants and prevent any form of exploitation. Finally, clear communication about data ownership and dissemination was crucial, ensuring that participants understood how their stories would be used and shared. By carefully addressing these ethical considerations, the research could yield valuable insights while honoring the dignity and rights of snake envenoming survivors.

Results and Discussion

This chapter presents the findings and analysis of the qualitative data gathered from in-depth interviews with snake envenoming survivors residing in rural areas of Camarines Sur. It provides a comprehensive profile of the participants and focuses on understanding their lived experiences, exploring the multifaceted impacts of snake envenoming on their quality of life, and identifying the coping mechanisms they utilize in their post-envenoming realities.

1. Lived Experiences and Quality of Life of Snake Envenoming Survivors in Rural Areas in the Province of Camarines Sur

This qualitative study employed a descriptive phenomenological approach to explore the lived experiences and quality of life of snake envenoming survivors in rural Camarines Sur. This approach was selected for its focus on uncovering the essential meanings attributed by individuals to a specific life phenomenon, in this case, surviving snake envenomation and how these experiences have shaped their lives. Data were collected through in-depth interviews, transcribed, and analyzed thematically to identify key patterns and themes. The study prioritized confidentiality. Table 1 summarizes the findings.

Table 1. Summary of Themes

Themes	Categories
Circumstances of Envenomation	Sudden bites Risky environments & Stigma Common venomous species
Physical & Functional Recovery	Physical effects Varying recovery Modified work roles
Psychosocial & Emotional Impact	Trauma, fear and anxiety Survivor's gratitude Provider distress
Support System & Coping	Family caregiving Spiritual reliance Varying community aid

Through iterative coding and theme development, twenty-two initial codes were generated from the narratives. These were refined into four major themes and twelve categories. The key themes that emerged were: 1.) Circumstances of Envenomation, 2.) Physical & Functional Recovery, 3.) Psychosocial & Emotional Impact, and 4.) Support System & Coping. These themes encapsulate the major dimensions of the participants' lived experiences and reflect the social, emotional, physical, and environmental challenges and adaptations they faced after snake envenomation. Each theme encompasses several specific categories that illuminate the nuances of their experiences. The theme, Circumstances of Envenomation was defined by the categories of a.) sudden bites, b.) risky environments & stigma, and awareness of c.) common venomous species. The second theme, Physical & Functional Recovery involved a.) physical effects, b.) the varying recovery among survivors, and c.) necessary modifications to their work roles. Third theme is Psychosocial & Emotional Impact captured a.) trauma, fear, and anxiety, b.) survivor's gratitude, and c.) providers distress. Lastly, Support System & Coping was characterized by a.) family caregiving, b.) reliance on spiritual beliefs, and the d.) variable levels of community aid received.

These themes and categories offer a layered understanding of how survivors navigate the complexities of recovery, resilience, and reintegration into their lives following snake envenomation.

1. Circumstances of Envenomation

The initial theme identified in this analysis is the Circumstances of Envenomation. This theme encompasses three categories derived from the participants' accounts: a.) Sudden bites, b.) Risky environments and stigma, and c.) Common venomous species. This theme highlights the background as well as the situational and environmental factors surrounding snakebite incidents.

1.a. Sudden Bites

This category of Sudden bites under the theme Circumstances of Envenomation describes the abrupt and unforeseen nature of snakebite incidents as experienced by participants. The data revealed that most envenomation events occurred during everyday activities, including farming, walking, hanging laundry, or even being indoors. Participants consistently emphasized that they did not see the snake prior to the attack, suggesting the stealthy and silent nature of these reptiles in rural environments. This highlights a critical area for public health education and community awareness on snakebite prevention. The following codes were identified within this category: snake not seen during attack, snake not noticed due to distraction, field work, farming routine, and snake in the house.

Data Explication

The suddenness of the snakebites reported by participants highlights the unpredictability and hidden nature of snake threats in rural areas. The analysis of the eight participants shows that these incidents occurred across a variety of settings like rice fields, highways, households, and cornfields. Six participants were bitten during routine farming-related work (Participants 1, 3, 4, 6, 7), one during household chores (Participant 2), and one inside their home (Participant 8). These findings highlight a key vulnerability shared by individuals involved in daily subsistence activities, particularly those working in environments with overgrown vegetation or inadequate lighting. Across all cases, the snake was not seen prior to the attack, which often resulted in surprise and a delayed response. This commonality emphasizes the urgent need for awareness campaigns focusing on snake habitat recognition and environmental hygiene.

Participants were often engaged in ordinary activities when the bites occurred, leading to a lack of vigilance. Participant 2, was bitten while hurrying to hang laundry, and kept looking up where the hanged clothes, highlights how familiarity with the environment and focus on routine tasks can increase vulnerability to unexpected encounters. The incidents occurred at various times of the day (morning, afternoon, night), further emphasizing the unpredictable nature of snakebites. Participant 1 was bitten around 10 am, Participant 2 around 11:30 am, Participant 3 around 9 am, Participant 4 around 9 am, Participant 5 around 7 pm, Participant 6 around 9 am, and Participant 7 around 9 am. This temporal distribution suggests that the risk is not confined to specific times of the day, requiring constant vigilance in potentially hazardous environments.

For those engaged in agricultural work, the bites often occurred as part of their regular farming activities. Participant 3, while driving a tractor, Participant 6, checking his cornfield. These accounts emphasize the occupational hazard faced by farmers in these rural settings, where snake encounters are an inherent risk of their livelihood (Nur et al., 2023). A recent study (N'Krumah, et al., 2025) have indicated that snakebites frequently occur during farming activities, particularly in rural agricultural settings. The risk was not limited to outdoor work environments, as evidenced by Participant 8's experience within their own home, this highlights the potential for snakes to enter domestic spaces, posing a threat even within seemingly safe environments. A study (Bobalola et al., 2020) also revealed that most frequent site of human-snake encounters was in a residential area. Recent studies continue to highlight the sudden and unexpected nature of snakebites, particularly in agricultural settings. Ochoa et al. (2020), in their study on snakebite incidence in rural Nepal, noted that many bites occurred during routine farming activities with victims often unaware of the snake's presence until the moment of the bite. Similarly, Bawaskar et al. (2022) emphasized the element of surprise in many snakebite cases in rural India, occurring during everyday tasks in and around homes and fields.

These findings corroborate the experiences shared by the participants in this study, underscoring the need for increased awareness and preventive measures in these high-risk environments. The range of contexts, from agricultural fields to indoor spaces, demonstrates the need for broad-based community interventions that address diverse exposure risks. These narratives offer compelling insights into the lived vulnerability of rural residents and set the stage for examining the longer-term physical and psychological consequences addressed in the subsequent themes.

1.b. Risky Environments & Stigma

The second category within the theme of Circumstances of Envenomation is Risky Environments & Stigma. This category illustrates how snake envenomation incidents are embedded in both the physical danger of rural living environments and the cultural stigma attached to snakebites. Risk factors are two-fold, it involves the physical environment, its geographical and occupational context of rural life, and the cultural environment, the persistent cultural beliefs that shape perceptions of danger and treatment. The codes that emerged from the data to define the risky environments were *grassy field, trees, field, plantation, side walk, dry grass, house near the field, bite means death, folk healer, traditional practice, and unsafe traditional practices*

Data Explication

The participants' accounts vividly illustrate the types of high-risk environments where snake encounters are most likely to occur. These accounts underscore the hidden threats of snakebite in various settings within their rural communities. A significant number of incidents took place in agricultural settings such as farms and plantations, (Participants 1,3,4,6,7) reaffirming the role of

occupational exposure in snakebite vulnerability. Fields with tall grasses, dry vegetation, and embankments offer ideal hiding spots for snakes, making encounters more likely during routine farming tasks.

Additionally, homes situated near or adjacent to uncultivated land or vegetation present residential risks. For instance, several participants (Participants 1,2,6,8) highlighted how forested areas, grassy surroundings, or fields bordered their homes or workspaces, blurring the line between domestic and wild habitats. Even roadsides and highways were not exempt, especially when bordered by overgrown vegetation or debris (Participant 5,6). This emphasizes the wide variety of settings in which these risks manifest.

These findings align with recent literature (Eid et al., 2021) noted that more than half of snakebite incidents in Jordan occurred in agricultural fields. Jayawardana et al. (2020) similarly reported high incidence rates in rural Sri Lankan farmlands and gardens, while Ratnarathorn et al. (2024) highlighted that habitat encroachment and deforestation contribute to increased snake-human contact in Southeast Asia.

Additionally, the normality of practicing traditional healing in rural settings reveals how cultural knowledge systems heavily influence initial responses to treatment. All participants shared instances where they resorted to folk healing before or even after getting treatment biomedically. Some practicing harmful traditional first aid such as eating soil, drinking herbal concoctions, burning, or tying the limbs tightly as seen on Participants 1,2,4,7, and 8. These acts are not merely practices of desperation, but embodied traditions passed down through generations. Unfortunately, many of these are medically unsafe and delay proper intervention, increasing health risks. Layered over this environmental vulnerability is a social stigma, one that is both subtle and internalized. As Participant 2 noted, snakebite is sometimes equated with death or divine punishment, reflecting fatalistic and moralizing views of snake encounters. Others, like Participant 6, questioned the validity of paratambal (folk healers), signaling a growing but conflicted awareness of modern medicine versus traditional belief. This intersection of geography, culture, and poverty forms a multidimensional risk profile. The geographical risks expose individuals to venomous snakes. The cultural practices and beliefs promote initial reliance on traditional healing. And stigmatizing beliefs frame the bite as punishment or shame, discouraging open discussion or timely care.

The double burden of physical danger and cultural stigma complicates the pathway to biomedical treatment. Even when participants recognize the severity of their condition, the ingrained tradition to “magpatambal muna” delays hospital visits. In the worst cases, such as for Participants 4 and 7, dangerous practices like burning the wound or using matches to “draw out venom” could have worsened outcomes. Despite several participants ultimately seeking hospital care, many admitted that these traditional steps were taken first, revealing how trust in modern medicine competes with community beliefs.

The cultural environment posed another layer of risk in this vulnerable population. Survivors in remote areas especially in rural areas, often resorted to traditional first aid responses due to the absence of nearby health facilities or transportation as seen in previous research (Jadon et al., 2021; Farheen et al., 2025). These included cutting (incising) the bite site, burning the wound, applying herbs, or eating soil, all of which reflect common but harmful folk practices in the local context, this was observed during the interviews (Participant 1, 2, 3,4,7,8). These actions, while grounded in cultural beliefs, often delayed access to biomedical treatment and exacerbated tissue damage and infection, further endangering the lives of snakebite victims.

Overall, the analysis of the lived experiences of snakebite survivors in rural Camarines Sur reveals a strong interconnectedness between risky environmental factors and deeply ingrained cultural stigma. These two elements are not isolated issues. Rather, they intricately influence both the initial circumstances leading to snake envenomation and the subsequent journey of treatment seeking and the psychosocial challenges faced by survivors. Consequently, effective public health interventions aimed at mitigating the impact of snakebites in this region must adopt a holistic approach. This approach needs to go beyond simply addressing the geographical exposure to snakes and actively engage with the prevailing cultural narratives that may promote unsafe first aid practices, contribute to delays in seeking appropriate medical care, and exacerbate the emotional and social burdens experienced by survivors. By acknowledging and addressing both the environmental risks and the cultural context, interventions can be more relevant, effective, and ultimately lead to improved health outcomes and well-being for these vulnerable communities.

1.c. Common Venomous Snakes

The third category in the Circumstances of Envenomation is common venomous snakes, focuses on the participants' perceptions and identification of the snake species involved in their envenomating incidents. While precise identification by non-experts can be challenging, their descriptions and local names provide valuable insight into the types of venomous snakes prevalent in their environment and those they believe they encountered. This understanding, even if based on local knowledge and visual cues, can influence their fear, treatment-seeking behavior, and perceived risk. The codes that were devised under this category were: *cobra*, *yellow snake*, *white spotted*, *uro-udto* and *Philippine cobra*.

Data Explanation

Participants' narratives point to the Philippine cobra as the most commonly identified snake, either through direct observation or post-incident accounts. The cobra's distinct hood and aggressive stance made it more recognizable. The description of a yellow snake by Participants 2 and 6 may represent either a color variant or confusion between species, which is not uncommon among non-experts.

The repeated reference to the local name "uro-udto" suggests a strong community-held belief in the lethality of certain black snakes.

Whether this term refers to a cobra, krait, or another species requires further scientific validation but represents a critical intersection of local knowledge and biological classification. Some snake descriptions may indicate misidentification or encounters with non-venomous snakes, which highlights the importance of education in improving snake recognition and response. Nevertheless, these narratives underscore the high level of fear and perceived danger associated with snakes in rural Camarines Sur.

Findings correspond with Tan et al. (2020), who highlight the Philippine cobra as a major source of neurotoxic envenomation in the country. Additionally, Fernandez (2021) notes the Philippines' biodiversity includes various venomous species, including pit vipers and sea snakes. Cultural practices following snakebites, such as the killing of snakes mentioned by several participants, also reflect broader human-wildlife conflict issues. Eid et al. (2021) and Ratnarathorn (2024) observed similar trends in Jordan, where misinformation and fear contribute to unnecessary snake killings, potentially threatening biodiversity.

Understanding local perceptions of venomous snakes is crucial for tailoring community-based education, encouraging safe behavior, and guiding the effective distribution of antivenom. Conservation efforts must also consider these cultural dynamics to reduce harmful interactions between humans and snakes.

2. Physical and Functional Recovery

The second theme in this study is Physical and Functional Recovery. This theme explores the lasting consequences of snake envenomation on the participants' physical health and their ability to perform daily activities, including their work roles. It delves into the spectrum of recovery experiences and the adaptations individuals have had to make due to the physical sequelae of the snakebite. The categories that were formulated under this theme includes: *Physical effects, Varying recovery, and Modified work roles.*

2.a. Physical effects

The first category in the theme Physical and Functional Recovery is Physical effects. This category represents a range of both localized and systemic health issues reported by snakebite survivors. Codes that were devised under this category were: *non healing wound, chest pain, paresthesia, wound came back, heavy feet, scar, body weakness, no lasting effect, hearing difficulties, swelling, diseases, observation by wife, symptom after the antivenom, droopy eyes, skin changes, pain, occasional pain, drowsy, limited movement, bleeding wound, and nausea.*

Data Explication

The physical effects described by participants reveal a wide array of localized and systemic symptoms that span from mild discomfort to severe disability. Participant 3 and 5 noted lump on the post bite site. Participants 2 and 7 reported non-healing wounds, persistent bleeding, and swelling, which were accompanied by disfigurement, pus formation, and scarring. Participant 6 exhibited drooping of the eye and darkened skin. Participant 3 noted general weakness after hospitalization, and Participant 5 described swelling at the site of the bite. These narratives suggest that the effects of snake envenomation extend beyond immediate toxicity to long-term impairments. The persistent dragging of limbs, inability to walk, and prolonged healing periods point to systemic damage. The neurotoxic effects observed in Participant 6 (droopy eyelid and heaviness) are indicative of elapid venom, particularly cobra species. Participant 2's chest pain post-intubation and continued paresthesia, along with Participant 7's hemorrhagic episodes, were not likely caused by viper envenomation but were instead exacerbated by harmful traditional practices. In Participant 7's case, the wound was aggravated by the actions of a "paratambal" (traditional healer), who burned the site with matches and applied a tourniquet in an attempt to neutralize the venom. These harmful interventions likely contributed to severe tissue damage, prolonged bleeding, infection, and scarring.

These findings are consistent with global research on the pathophysiological consequences of snakebite. Resiere et al. (2022) and Huang et al. (2022) link cytotoxic venom to localized necrosis and slow healing, as evidenced in the experiences of Participants 2 and 7. Neurotoxic presentations, such as those from cobra envenomation, align with Barman (2025) and Tansuwanarat et al. (2023), who identified ptosis and neuromuscular impairment in similar survivors. The long-term functional deficits described are also validated by Waiddyanatha et al. (2022) and Jayawardana et al. (2020), who reported that many rural snakebite survivors face enduring disabilities and systemic complications due to delayed care or incomplete recovery. Harmful first-aid methods such as cutting, burning, or tourniquet use, often practiced by traditional healers, have also been condemned in studies such as Habib et al. (2020) and Margono et al. (2022), which showed that such practices increase infection risk and worsen outcomes.

The physical effects in this study are not only symptomatic of venom types but are also shaped by socioeconomic and geographic limitations in rural healthcare access, traditional treatment beliefs, and the absence of appropriate post-envenomation rehabilitation.

2.b. Varying recovery

The second category in the theme Physical and Functional Recovery is Varying recovery. This category underscores the reality that recovery from snakebites is not a uniform process but rather a spectrum of experiences unique to each individual. This variability in recovery trajectories is a critical facet of snakebite pathology, shaped by a complex interplay of factors. These include the specific species of snake involved, which dictates the type and potency of venom; the quantity of venom injected during the bite; the overall health status and pre-existing conditions of the envenomed individual; and critically, the speed and efficacy of the medical treatment received. The codes that were devised under this category were *rest, pain and swelling, speech problem, swelling and slow healing.*

Data Explanation

The narratives reveal significant variation in recovery timelines and severity among participants. While some, like Participants 1 and 4, experienced rapid or uncomplicated recoveries, others such as Participants 2, 6, and especially 7 faced prolonged or incomplete healing. Participant 7's case involved extended immobility and chronic wound recurrence, indicating deep tissue damage and systemic impact.

Recovery is not linear and may be influenced by both clinical and non-clinical factors. Participant 2's speech difficulty suggests complications from intubation during hospitalization. In Participant 7's case, the prolonged healing and chronicity of the wound may be linked to traditional practices such as burning and tourniquet application by a "paratambal," which likely exacerbated tissue damage. Participant 8's ongoing weakness further supports the notion that systemic effects of venom or antivenom reactions may linger despite visible healing. Despite these challenges, several participants demonstrated remarkable resilience. Participant 7 endured years of physical limitations and wound recurrence but continued to function and adapt over time, reflecting determination and psychological fortitude. Participant 3's effort to gradually return to work after five months also showcases adaptive coping and perseverance. Such narratives reveal the inner strength survivors draw upon as they navigate recovery, often in the absence of consistent medical or social support.

These findings align with the research of Tansuwanarat et al. (2023), Waiddyanatha et al. (2022), and Jayawardana et al. (2020), who similarly highlighted that the severity and duration of recovery from snakebites are significantly influenced by the type and amount of venom injected, as well as the promptness and effectiveness of medical intervention. Their studies, often focusing on rural snakebite survivors, also documented the persistent challenges of physical impairments, the chronicity of wounds, and the protracted nature of the recovery process. Furthermore, the resilience demonstrated by the survivors in this study resonates with established psychological frameworks in trauma recovery. These frameworks suggest that even after experiencing significant and prolonged hardship, individuals can exhibit post-crisis growth and adaptation, finding ways to cope, rebuild their lives, and potentially experience positive psychological change in the aftermath of trauma.

Varying recovery outcomes among participants underscore the multifactorial nature of snakebite consequences. Delayed hospital care, harmful first aid practices, and inadequate rehabilitation services contribute to prolonged disability. At the same time, survivor resilience emerges as a vital factor in the healing process. These patterns demand tailored public health strategies that emphasize not only antivenom access but also education on proper first-aid, early biomedical treatment, and psychosocial support to aid survivors in rebuilding their functional lives.

2.c. Modified work roles

The third category in the theme Physical and Functional Recovery is Modified work roles. This category explores how the physical consequences of snakebite have affected the participants' ability to engage in their livelihoods. The codes that were devised under this category were *unable to work, light work only, change of roles and change of work*.

Data Explanation

The narratives provide compelling real-life examples of how snakebite can severely impact individuals' ability to work and earn a living, aligning with the socioeconomic consequences highlighted in recent research. The participant accounts reflect profound disruptions in occupational roles following snakebite envenomation. The inability to resume previous work duties for weeks to months was evident across several narratives, particularly for Participants 1, 2, and 3. Participant 7, whose wound would reopen with physical exertion, illustrates the lasting nature of envenomation injuries and their incompatibility with labor-intensive work. He also required constant wound protection even during light tasks.

Snakebite injuries extend beyond acute medical concerns, they carry substantial socioeconomic consequences. Recovery-related work absences led not only to income loss but also to role reversals and dependency on family members. Participant 1's and Participant 7's spouses stepping in to earn income exemplifies the broader familial strain that follows the physical incapacitation of a household provider. Participant 7's shift to lighter duties and self-monitoring of his wound reflects both the adaptation and limits imposed by long-term envenomation effects. The enduring nature of these limitations, extending up to 7 years in some cases, points to chronic morbidity that impedes full reintegration into previous work roles.

These findings are consistent with the work of Kasturiratne (2021), who highlighted the economic burden of snakebites due to time lost from work. Aglanu et al. (2022) similarly identified long-term productivity losses and underemployment among survivors in rural communities. The case of Participant 7 particularly echoes the findings of Habib et al. (2020), which emphasized the ripple effect of envenomation on family economic resilience and social roles. Moreover, the shift in work responsibilities and self-modified routines observed among participants aligns with resilience theory (Duangchan & Matthews, 2021), illustrating how individuals reorganize their lives post-trauma to restore functionality despite ongoing limitations.

Modified work roles among snakebite survivors illustrate a critical dimension of post-envenomation burden. While many are eventually able to return to work in some capacity, the path to doing so is often constrained by physical impairments and socio-environmental challenges. Survivors like Participant 7 highlight both the chronic nature of some injuries and the adaptive strategies people employ to maintain livelihood and dignity. These insights underscore the need for integrative healthcare approaches that

include rehabilitation, workplace reintegration programs, and family-centered economic support following snakebite incidents.

3. Psychosocial and Emotional Impact

The third theme is the Psychosocial and Emotional Impact. This theme explores the profound yet frequently overlooked psychological challenges faced by individuals who have experienced snakebite envenomation. This theme illuminates both the immediate emotional reactions following the traumatic event and the persistent psychological effects that survivors endure long after their physical injuries have healed. It underscores the depth of emotional distress resulting from the sudden, life-threatening nature of snakebite incidents, which often leave survivors grappling with lasting emotional scars. The three categories that were formulated under this theme includes *Trauma, fear and anxiety, Survivor's guilt, and Provider distress*.

3.a. Trauma, Fear and Anxiety

The first category in the theme Psychosocial and Emotional Impact is Trauma, fear and anxiety. This category highlights the profound psychological and emotional distress experienced by snakebite survivors and their families. The codes that were devised under this category were fear of incising, tears, wife unable to work back in field, fear, increased awareness, easily startled, worry, bite means death, fear, avoidance, increased awareness on surroundings, extra careful, avoid encounter, wife's fear, awareness of environment, resilience, family fear and children fear.

Data Explication

This section analyzes the participants' narratives to illustrate the various facets of trauma, fear, and anxiety experienced following their snakebite incidents, aligning with the codes previously identified. They reveal layers of trauma, anxiety, and altered perceptions that significantly affect the participants' lives and the lives of their families. The initial moments after the bite are often marked by intense fear, as seen in Participant 2's prayer and feeling of impending death. This immediate terror can grow into a persistent anxiety that affects the survivors' interactions with their environment. Participant 1's feeling of unease even with light work and their constant anticipation of encountering snakes illustrate how the initial trauma can generalize to everyday situations.

The narratives poignantly highlight the ripple effect of the snakebite on family members. Participant 1's wife's inability to return to the fields demonstrates the vicarious trauma experienced by witnessing a loved one's suffering. Similarly, Participant 7's account of his children's fear and his eldest son's premature worry about family responsibilities underscores the profound emotional impact on the entire family unit. These experiences are consistent with the growing recognition in the literature of the broader social and familial consequences of snakebite. The narratives also reveal how the traumatic experience can alter cognitive processes and perceptions. Participant 2's auditory hallucinations and altered sense of reality suggest a significant psychological disturbance beyond simple anxiety. Participant 1's feeling of constantly encountering snakes, even if not objectively true, indicates a heightened perceptual bias towards potential threats, a common feature of trauma.

The participants describe various behavioral adaptations aimed at reducing the risk of future encounters. These range from increased vigilance (Participants 1 and 6) and carrying protective tools (Participants 3 and 6) to outright avoidance of certain environments (Participants 3 and 8). While these behaviors serve a protective function, they can also limit activities and impact livelihoods, as seen with Participant 1's initial reluctance to return to construction work and Participant 6's altered farming practices. While fear and anxiety are prominent, some narratives also hint at resilience. Participant 6, despite initial paranoia, develops coping mechanisms to continue working in the fields. Participant 7 endures a prolonged period of disability while his family adapts. Understanding the factors that contribute to resilience in the face of such trauma is crucial for developing effective psychosocial support interventions.

Participant 5's immediate prayer and acceptance of potential death reflect the influence of cultural and religious beliefs in coping with a life-threatening event. The belief that "bite means death" can heighten fear but also provide a framework for understanding and accepting the situation. Participant 1's physical unease ("stepping on certain ground makes me feel uneasy") and Participant 6's physical reactions to the memory of the bite suggest the somatic manifestations of their anxiety and trauma. The mind-body connection is a crucial aspect of understanding the full impact of such experiences.

Modern research continues to delve into the intricate psychosocial consequences of snakebite. Similar results show profound understanding of the personal journeys of snakebite survivors, uncovering the complex web of fear, anxiety, social stigma, and financial strain they often face (Habib et al., 2020). These studies frequently emphasize the enduring emotional wounds that can persist long after physical healing. It underscores the often-unaddressed mental health needs of snakebite survivors in affected areas, pointing to the scarcity of psychological support and advocating for the integration of mental health services within comprehensive snakebite management programs (Gou et al., 2024).

The accounts shared in this study from Camarines Sur strongly suggest a similar need for such support within this local context. Several studies also examine the crucial role of community support networks in the psychosocial recovery process of snakebite survivors (Wafula et al., 2023). Although not explicitly detailed in the preceding excerpts, the strength or absence of such social support systems could significantly impact the emotional well-being of the participants in this study. The trauma and prolonged psychological distress recounted by Participants 3 and 7 echo the ongoing mental health challenges observed in comparable populations, including symptoms consistent with Post-Traumatic Stress Disorder (PTSD) as described in the work of Chen et al.

(2024).

The narratives reveal a significant and multifaceted psychological burden experienced by snakebite survivors and their families. The fear, anxiety, and potential trauma extend beyond the immediate aftermath of the bite, impacting their daily lives, livelihoods, and family relationships. These findings strongly support the growing recognition in the literature of the critical need to address the psychosocial aspects of snakebite as part of comprehensive management and support programs.

3.b. Survivor's Gratitude

The second category in the theme Psychosocial and Emotional Impact is Survivor's gratitude. This category illuminates the powerful positive emotions that can emerge from surviving a traumatic event like snake envenomation, showcasing the human capacity for thankfulness even in the face of adversity. The codes that were devised under this category were *life is at stake, 3rd life, perfect timing, god's grace, grateful for antivenom available, and grateful for life*.

Data Explication

The narratives reveal a powerful and multifaceted sense of gratitude that emerges from their life-threatening experiences. This category transcends a simple acknowledgment of survival, delving into profound shifts in perspective, reinforced spiritual beliefs, and a heightened appreciation for life's fragility and the support received. The participants' expressions of gratitude resonate deeply with the psychological understanding of **near-death experiences (NDEs)** and their transformative aftermath. Surviving a venomous snakebite, an event carrying a significant risk of mortality, often triggers a profound re-evaluation of existence. Participant 1's assertion of this being their "third life" encapsulates this sentiment, suggesting a renewed sense of purpose and a conscious awareness of having been granted additional time. This aligns with research on NDEs, which frequently reports a heightened appreciation for life and a shift in values among survivors (Kopel, 2019). This gratitude can serve as a powerful catalyst for positive behavioral changes and a more intentional approach to living.

Faith and spirituality emerge as significant frameworks through which survivors interpret their survival and cultivate gratitude. Participant 2's direct attribution of recovery to divine mercy underscores the role of faith in finding solace and meaning in a traumatic event. This aligns with studies indicating that religious and spiritual beliefs can provide a crucial coping mechanism in the face of adversity, fostering a deep sense of thankfulness for divine intervention (Lalani et al., 2021). Participant 4's feeling of not being "ready to be taken" further suggests a spiritual understanding of their continued existence, implying a belief in a higher power's timing and purpose.

The close encounter with death inherent in a venomous snakebite often cultivates a heightened awareness of **mortality and the preciousness of life**. Participant 1's poignant reflection that "a person's life is really what's at stake" highlights this newfound appreciation for the fundamental value of being alive and the significance of everyday moments. This contrasts with the potential for prolonged fear and anxiety, suggesting that confronting mortality can paradoxically lead to a deeper engagement with life. Participant 8's gratitude extends beyond personal survival to encompass a broader **sense of community and empathy**. Their relief at the availability of antivenom is coupled with concern for another victim, demonstrating a recognition of the critical role of accessible medical resources. This highlights a social dimension of gratitude, where survivors appreciate the systems that supported their recovery and recognize the potential vulnerabilities of others, potentially fostering a desire for advocacy and improved access to care.

The narrative of Participant 7 offers a powerful illustration of the complex and sometimes delayed emergence of gratitude. Their descent into suicidal ideation underscores the profound psychological distress that can accompany severe snakebite. The subsequent emergence of intense gratitude for survival signifies a remarkable journey of **emotional resilience and recovery**. This highlights that gratitude can arise even from the darkest of experiences, fueled by the support of loved ones and a renewed appreciation for life. This aligns with the concept of post-traumatic growth (PTG), where individuals experience positive psychological changes as a result of struggling with adversity. Gratitude is often a key component of PTG, as survivors find new appreciation for life and relationships (Judah, 2023).

While not explicitly detailed, the **support received from family, friends, and healthcare providers** likely plays a crucial role in fostering a survivor's sense of gratitude. During a time marked by intense vulnerability and potential life threatening circumstances, the experience of being cared for, both emotionally and physically, can profoundly amplify a survivor's appreciation for life itself and for the individuals who extended their help (Reid, 2024). This act of receiving support can foster a deep sense of being valued and not being alone in their ordeal, thereby nurturing feelings of thankfulness. Future exploration could delve deeper into the perceived impact of social support on the development of gratitude.

The expressions of gratitude from these snakebite survivors offer a vital insight into the human capacity for finding positive meaning even in the face of traumatic experiences. This gratitude, often intertwined with personal beliefs, a heightened awareness of mortality, and an appreciation for support and resources, underscores the resilience of the human spirit. Understanding this dimension of the psychosocial impact is essential for providing comprehensive and holistic care that acknowledges the complex emotional journey of snakebite survivors and supports their long-term well-being.

3.c. Provider distress

The third category in the theme Psychosocial and Emotional Impact is Provider distress. This category specifically focuses on the

significant emotional burden experienced by survivors stemming from their diminished capacity to fulfill their roles as providers for their families as a direct consequence of the snakebite's impact. The codes that were devised under this category were *need to work and unable to provide*.

Data Explication

The narratives consistently demonstrate that the inability to work and provide for their families is a significant source of distress for snakebite survivors, aligning with recent research on the socioeconomic impact of snakebite.

Participant 2 expressed urgent concern about the family's daily needs, stressing that without work, there is nothing to sustain their household. Participant 4 emphasized the reality of self-reliance in old age and the limits of receiving support from adult children, highlighting the anxiety of not having anyone to depend on. Participant 6 voiced concern over the implications of halting farm work, particularly on their child's education. While Participant 7 delivered a powerful testimony about the psychological toll of being unable to fulfill his role as a father and provider. The emotional strain led to feelings of helplessness and suicidal ideation. The accounts show financial vulnerability and psychological strain stemming from the participants' disrupted ability to provide for their families. Participant 7's narrative, in particular, exemplifies the depth of emotional suffering tied to his perceived failure as a provider. For these individuals, work is not merely a means of livelihood but also a symbol of responsibility, dignity, and familial identity.

Provider distress experienced by snakebite survivors represents a complex issue that intertwines economic hardship with profound emotional consequences. It highlights the delicate balance between physical health, the capacity for economic contribution, and overall mental well-being. When a snakebite incapacitates an individual, particularly the primary income earner, it triggers a cascade of challenges. Survivors often experience role displacement within the family and community, leading to a diminished sense of self-worth and contributing to increased stress within the household. The lack of reliable and consistent social safety nets in many affected regions further exacerbates this psychological burden. This is particularly salient among male survivors who often strongly identify with their traditional breadwinner roles. The inability to fulfill these expectations can lead to feelings of inadequacy, anxiety, and depression, compounding the physical and economic hardships they already face. This distress not only affects the individual survivor but also ripples through their families and communities, underscoring the need for holistic support systems that address the economic, social, and psychological dimensions of snakebite survival. Interventions that focus solely on medical treatment often overlook these critical aspects, highlighting the necessity for comprehensive rehabilitation programs and social support mechanisms that aim to restore not only physical function but also economic stability and emotional well-being.

The findings reflect global literature on snakebite burden, particularly in rural settings. Kasturiratne et al. (2021) and Schurer et al. (2023) have highlighted that prolonged inability to work due to envenomation contributes to financial insecurity and emotional strain in low-resource contexts. Funes et al. (2024) emphasized that for many, livelihood is tightly bound to identity, when disrupted, it leads to a loss of self and function. The suicidal thoughts expressed by Participant 7 align with Aglanu et al. (2022), who documented the mental health sequelae of snakebite, advocating for the integration of psychosocial support in post-envenomation care.

Provider distress is a profound psychosocial consequence of snakebite envenomation, significantly impacting their emotional well-being, identity, and family dynamics. The inability to fulfill expected familial roles disrupts the survivors' emotional stability and sense of identity. These findings call for a multidimensional approach to snakebite rehabilitation, one that integrates financial aid, mental health support, and community-based resilience-building to address both the practical and psychological dimensions of recovery.

4. Support Systems and Coping

The fourth theme is Support Systems and Coping. This theme explores the the various resources, interpersonal relationships, and personal strategies that snakebite survivors draw upon to manage the multifaceted physical, emotional, and socioeconomic difficulties stemming from their envenomation. It investigates both the formal support networks, such as healthcare providers and government assistance (where available), and the informal networks, including family and community. Furthermore, this theme examines the individual coping mechanisms that survivors develop and employ to navigate the often long lasting consequences of the snakebite. The four categories that were formulated under this theme includes *Family caregiving, Spiritual reliance, and Varying community aid*.

4.a. Family Caregiving

The first category in the theme Support System and Coping is Family caregiving. This category underscores the significance of familial relationships in the recovery process. The codes that were devised under this category were *support from sibling, support from employer, support from family, support from friends, son's support, closer to spouse, family concern, family support, and spouse support*.

Data Explication

The narratives strongly underscore the critical role of family caregiving and support in the aftermath of snakebite, aligning with

recent research findings. The participants received various forms of support, including financial assistance, practical care, emotional encouragement, and logistical help. Participants 1, 2, 3, and 6 received extensive support from siblings and children in covering hospital expenses, securing antivenom, providing food, and assisting during confinement. Participants 4, 5, and 7 highlighted the strengthened emotional bonds with their spouses, who provided not only physical caregiving but also psychological reassurance in times of vulnerability. Participant 7's wife offered emotional anchorage, affirming loyalty, faith, and encouragement even during moments of suicidal ideation, showing profound relational resilience. Participant 8 noted that only a few family members, notably her mother-in-law and relatives from Manila, stepped in to help, illustrating the variability of familial support availability.

The data reflect the multidimensional nature of family caregiving. Survivors leaned on their immediate and extended family networks not only for financial stability but also for emotional sustenance and moral strength. Some families organized caregiving tasks (e.g., Participant 6), while others mobilized resources over long distances (e.g., Participant 8). The psychological burden of recovery was significantly buffered by the presence of compassionate and proactive family members. The experience of snakebite, especially in resource-limited settings, exposes vulnerabilities not only in health infrastructure but also in economic and social systems. Where formal institutional support was lacking, families emerged as the primary safety net. Participants who experienced robust family support also demonstrated signs of better emotional resilience and coping. On the contrary, the absence or limitation of family caregiving (as in Participant 8) appeared to exacerbate feelings of isolation or reliance on fewer individuals. The intimate care provided by spouses (especially Participant 7's spouse) exemplifies how relational resilience and unconditional support become protective factors against emotional breakdown. These familial responses highlight the importance of love, reassurance, and presence in restoring a survivor's sense of dignity and hope.

This category's findings align with Funes et al. (2024), who underscore that family support serves as a cornerstone of resilience in health crisis recovery. Spousal caregiving has been shown to increase health outcomes and emotional stability in chronic conditions (Brown et al., 2022), which mirrors the role of spouses in Participants 4, 5, and 7. Calhoun et al. (2022) further explain that social support systems act as buffers against psychological trauma, reducing the likelihood of anxiety, depression, or PTSD after critical health events. Participant 6's coordinated family efforts also reflect what (Siddiqui, 2024) termed the family stress management in which family cohesion and resourcefulness mitigate the effects of trauma.

Family caregiving emerged as a pivotal force in the physical and emotional rehabilitation of snakebite survivors. Throughout participants' narratives, the family was consistently portrayed as a foundational pillar of support, significantly influencing the survivor's rehabilitation trajectory. Whether through material assistance, companionship during confinement, or words of affirmation and faith, the family served not just as caregivers, but as life-anchors. These narratives reaffirm that interpersonal connections are critical determinants of recovery, and any intervention aimed at supporting snakebite survivors must recognize, engage, and strengthen these familial networks. These findings also underscore the necessity of adopting family-centered interventions within snakebite rehabilitation programs, recognizing family members as integral partners in the healing process, rather than peripheral observers. By consciously integrating and empowering families in the recovery process, we can significantly enhance the well-being and long-term rehabilitation outcomes for snakebite survivors, transforming them from passive recipients of care into active participants in their healing journey.

4.b. Spiritual reliance

The second category in the theme Support System and Coping is Spiritual reliance. This category highlights the often profound role that faith, religious beliefs, and spiritual practices play in the recovery journey of snakebite survivors, turning to their spirituality provides a source of comfort, strength, and meaning in the face of significant adversity. The codes that were devised under this category were *faith, devotion, prayers, divided tasks for siblings, God's plan and trust in God*.

Data Explanation

The narratives consistently illustrate the significant role of spiritual reliance as a coping mechanism for snakebite survivors, aligning with recent research on religion and coping in the context of health crises and trauma. Participant 1 expressed emotional reliance on God and discussed shifting devotional practices as part of spiritual growth. Participants 2, 4, 5, and 7 emphasized prayer as a source of emotional strength during the most vulnerable phases of their recovery. Participant 6 provided a detailed account attributing survival to divine orchestration, highlighting how timely resources and support seemed to align as part of a higher plan. Participant 8 recounted daily and nightly prayers in the ICU, describing the experience with raw emotion and gratitude. The intensity of spiritual practice was heightened by fear of death, feelings of helplessness, and the inability to speak or move, situations where prayer was both an act of hope and survival.

The narratives illustrate that spirituality serves as an internal stabilizer in the face of physical threat and psychological upheaval. For many participants, prayer was not just ritual, it was an existential anchor during hospitalization, isolation, and uncertainty. The emotional intensity of their narratives, especially from Participants 6 and 8, demonstrates how spirituality bridged the gap between helplessness and hope. Spiritual reliance functions as a protective coping strategy, offering Cognitive reframing of the snakebite event as a divinely permitted challenge or mission (Participants 2 and 6). Emotional regulation through sustained prayer, which helped participants manage anxiety, despair, and powerlessness (Participants 5, 7, and 8). Strengthened resilience, enabling participants to endure painful treatments, long recovery periods, and existential fear. The role of prayer and trust in God also reflects

a culturally embedded response to trauma, where religiosity is deeply intertwined with personal identity and social norms, particularly in the rural Philippine context.

These narratives echo the findings of Ahmadi and Ahmadi (2021), who emphasized that spiritual coping fosters a sense of meaning, control, and hope among those dealing with illness. The belief in divine purpose, as shown in Participant 6's narrative, is a form of positive religious coping, which research links with enhanced emotional well-being (Theisen et al., 2021). Patil (2024) describes prayer as an emotion-focused coping mechanism, especially in critical health contexts. This aligns with Participants 1, 5, and 8's intense prayerful experiences, especially when other forms of support (like communication or movement) were limited. In culturally religious societies, spiritual reliance is often the first and most enduring line of defense in crisis situations (Gonzalez, 2024). The Philippines, with its high religiosity, provides a strong example of how spirituality serves not only as a personal belief system but as a communal and intergenerational source of strength.

The narratives reveal that spiritual reliance is a profound, culturally-embedded form of coping among snakebite survivors. Prayer, faith in God's plan, and trust in divine timing provided psychological stability and existential meaning during moments of extreme uncertainty. The alignment between these lived experiences and literature on religious coping underscores the therapeutic and resilience-building power of faith, particularly in rural and resource-constrained settings. Health practitioners and community programs should consider integrating spiritually-sensitive approaches into post-envenomation care, recognizing the spiritual narratives that survivors use to frame their recovery. Doing so not only respects local culture but also strengthens holistic recovery strategies.

4.c. Varying community aid

The third category in the theme Support System and Coping is Varying community aid. This category examines the different forms of assistance and support that snakebite survivors receive from their wider community, beyond their immediate family. The codes that were devised under this category were *transport aid, no community aid, community concern, distraction, support from government, community support, no help, community does not know, lack community support, LGU aid, employer's aid and others support*.

Data Explication

The narratives reveal a mixed picture of community aid for snakebite survivors, aligning with the "varying" nature of this support highlighted in research. Participants 1 and 4 reported little to no community assistance, often due to shared poverty or indifference in their barangays. Participants 2 and 6 described community concern and spontaneous support, such as being transported by a neighbor's van or accompanied by municipal health staff and known drivers. The reliance on a volunteer with a motorcycle (Participant 1) and a passing local van (Participant 2) highlights the importance of informal transportation networks in the absence of readily available formal emergency services. Participant 3 received modest government aid through DSWD, which partially covered the cost of prescriptions. Participant 7 highlighted a well-supported recovery facilitated by relatives, a landowner, an employer, and a former barangay captain, reflecting a network of informal and semi-formal aid. The absence of structured financial or logistical community aid, as described by Participants 1 and 4, paints a stark contrast to the more mobilized responses reported by others.

The narratives confirm that community support is highly variable, depending on social ties, economic status, and the presence (or absence) of local governance or health infrastructure. The variability reflects disparities in access to resources, organization of community systems, and pre-existing social capital. Several key inferences can be drawn such as lack of transportation aid, especially during critical moments, is vital. The accounts of Participants 1, 2, and 6 show that timely help from neighbors or local vehicles can be life-saving. In regions lacking structured emergency transport, community-owned or operated vehicles often serve as de facto ambulances.

Emotional solidarity and crowd concern, as seen in Participant 2's case, are expressions of community empathy, though not always matched by material or financial support, which may be limited by shared economic hardship. Government aid, though occasionally accessible (as for Participants 3 and 7), appears to be reactive, small-scale, and inconsistent. This reflects broader concerns on how snakebite, recognized as a neglected tropical disease (NTD), receives insufficient structured government response (WHO, 2023). Negative community responses, such as neglect or absence of outreach (Participant 4), point to weak community cohesion or lacking emergency preparedness systems. These findings align with research showing that low community trust and social fragmentation reduce collective action during crises (Ehsan et al., 2019). Non-kin aid from employers, landowners, and former barangay officials (Participant 7) reveals the importance of broader social networks that transcend the nuclear family and can step in during acute need. This indicates that informal institutions (like workplaces and land tenure arrangements) may serve as alternative support structures in resource-scarce communities.

The findings reinforce the conclusions of Vaiyapuri et al. (2022), who emphasized the central role of community engagement and grassroots solutions in mitigating snakebite mortality in low-resource settings. Similarly, Ehsan et al. (2019) found that stronger social capital, marked by trust, norms, and reciprocity, increases resilience in health emergencies. Furthermore, WHO (2023) highlights the importance of integrated community-based responses and calls for improved local health system responsiveness in managing snakebite, particularly in rural, underserved areas. The stories from this study echo these recommendations by showing

both the strengths and gaps in existing community support structures.

This illustrates role that communities play in snakebite response and recovery. While some survivors benefited from compassionate neighbors, government help, and supportive employers, others faced neglect, financial strain, and logistical isolation. This variability underscores the need to enhance community-level preparedness and transport protocols, expand government-funded assistance programs for medical emergencies related to neglected tropical diseases, and promote inclusive community resilience programs that empower both formal and informal networks. By strengthening these supports, rural communities can be better equipped to respond to snakebite incidents and safeguard the long-term well-being and dignity of snake envenoming survivors in rural areas of Camarines Sur.

2. Proposed Plan to Improve the Quality of Life of Snake Envenoming Survivors in Rural Areas in the Province of Camarines Sur

Based on the analysis, interpretation, and evaluation performed by the researcher, there are indicators on the lived experiences and quality of life of snake envenoming survivors in rural areas in the province of Camarines Sur that needs intervention leading to the creation of the proposed measure to improve their quality of life.

Rationale

Based on the key findings of the study as presented in the thematic findings necessitate a comprehensive, multidimensional response to snake envenomation. The proposed plan targets the underlying causes through culturally-sensitive community health education and the establishment of barangay-level emergency response systems, thereby significantly mitigating the immediate health risks associated with snakebites. Acknowledging the diverse range of disabilities experienced by survivors, it calls for accessible and continuous care, including physical rehabilitation services. To address the fear and trauma often associated with snakebites, the plan incorporates mental health services, survivor support groups, and community debriefing sessions. Finally, it aims to strengthens social and economic support through caregiver programs, financial aid, and reintegration efforts. This aligned approach ensures relevance, responsiveness, and sustainability, ultimately enhancing survivors' quality of life and resilience in the face of medical emergencies, physical and emotional impacts, economic disruption, and unequal access to care.

General Objective

To holistically improve the quality of life of snake envenoming survivors by establishing comprehensive and integrated health, psychosocial, economic, and community-based support systems and initiatives that address their diverse and long-term needs.

Table 2. Proposed Plan to Improve the Quality of Life of Snake Envenoming Survivors in Rural Areas in the Province of Camarines Sur

Areas Of Concern	Objectives	Activities / Strategies	Person Involved	Expected Outcome
1. Snakebite Occurrence During Daily Routines	Raise awareness on snakebite risks during daily activities; Integration of culturally safe first aid practices.	Conduct community education on snakebite prevention and environmental safety practices; Establish barangay emergency protocols	Barangay Workers, Municipal Health Office, Community Leaders	Reduced incidence of snakebite accidents in everyday activities; Increased awareness, early hospital-seeking behavior; Quicker emergency responses during incidents.
2. Physical and Functional Recovery	Ensure access to comprehensive and long-term physical care.	Establish follow-up care programs: Mobile follow-up care and rehab outreach; Referral to physical therapy for physical	Hospitals, Rehabilitation Centers, Barangay Health Workers	Improved long-term physical and functional recovery among survivors.

recovery support.

Continuation of Table 2

3.Psychosocial and Emotional Impact	Support survivors' mental health and resilience building.	Provide access to trauma counseling; form survivor peer-support groups; integrate mental health check-ins in follow-ups.	Mental Professionals, Social Workers, Community Health Volunteers	Health	Improved decreased stronger	coping, trauma, community bonds
4.Strengthening Family and Community Support	Strengthen family, community, and institutional support for survivor reintegration	Facilitate access to livelihood programs and microfinance; Provide caregiver support sessions; Engage LGUs in sustained reintegration initiatives.	DSWD, DOLE, NGOs, Barangay Council, Livelihood Offices	Empowered survivors and families with improved economic resilience and support networks		

Summary, Conclusions, And Recommendations

This chapter summarizes the key findings of the study and presents conclusions, recommendations, and implications for future research and practice. The study aimed to understand the lived experiences and the multifaceted impacts of snake envenoming on survivors' lives and to identify strategies for improving their well-being.

Summary of Findings

This qualitative study focused on the lived experiences of survivors, particularly in relation to how this shape their quality of life. Specifically, this research answered the following:

1. Explore the lived experiences and quality of life of individuals who have survived snake envenoming in the rural areas of Camarines Sur.
2. Propose a plan to improve the quality of life of snake envenoming survivors.

The study revealed the following findings:

1. Lived Experiences and Quality of Life of Snake Envenoming Survivors in Rural Areas in the Province of Camarines Sur

The research highlighted key aspects of the lived experiences and quality of life of the snake envenoming survivors in rural areas in the province of Camarines Sur.

1.1 Circumstances of Envenomation

Snakebites occurred unexpectedly without warning, during routine activities such as farming, walking along paths, or performing household chores. The element of surprise and lack of visibility contributed to the suddenness of the attack. Snakebites took place in high-risk areas such as rice fields, plantations, forested areas and even inside their homes, revealing the pervasive risk in rural settings. Additionally, cultural environments posed another form of risk, in the proximity and absence of nearby health facilities, many survivors resorted to traditional first aid responses including harmful practices. The Philippine cobra (*Naja philippinensis*) was the most commonly identified species, with many survivors referring to snakes based on color or local descriptors.

1.2 Physical and Functional Recovery

Survivors reported swelling, numbness, muscle weakness, fatigue, and in some cases, recurring infections or long-term disability. Recovery outcomes varied widely. Some survivors regained normal function within weeks, while others required months and years of recuperation or remained permanently affected. Due to physical limitations, several survivors had to shift from farm labor or other strenuous activities to lighter tasks or dependency on family members.

1.3 Psychosocial and Emotional Impact

Survivors described severe emotional distress, including fear of death, trauma from hospitalization, and anxiety about being alone or returning to outdoor work. Survivors expressed deep gratitude for surviving the incident, often attributing their recovery to divine intervention and family support. Survivors who were breadwinners felt guilt and helplessness when they could no longer fulfill their provider roles.

1.4 Support System and Coping

Families played a crucial role in physical caregiving, emotional support, and financial assistance throughout the survivor's journey. Faith and prayer emerged as powerful coping mechanisms. Survivors leaned heavily on spirituality to make sense of their survival and find strength. Some survivors received transportation and emotional support from neighbors or local government units, while others reported being left to manage on their own.

These findings reveal that snakebite envenomation is not merely a medical crisis but a transformative life event. Survivors contend with prolonged physical recovery, emotional trauma, economic disruption, and the dangers of cultural first aid practices. However, they also demonstrate remarkable resilience, drawing strength from family, faith, and personal adaptation strategies to rebuild their lives after the bite.

2. Proposed plan to enhance the quality of life of snake envenoming survivors in rural areas in the province of Camarines Sur

The proposed plan outlined the key actions to improve the quality of life of snake envenoming survivors in rural areas in the Province of Camarines Sur. It is a comprehensive, theme-based intervention that addresses prevention, recovery, and reintegration. It included community education and emergency preparedness to reduce snakebite risks; provision of accessible physical rehabilitation to support functional recovery; mental health services and peer support to alleviate psychological trauma; and economic reintegration through livelihood programs, caregiver support, and strengthened institutional networks. Rooted in the survivors' lived experiences, the plan aimed to foster resilience, restore well-being, and enable survivors to rebuild secure and productive lives within their communities.

Conclusions

The findings of this research highlight the profound and enduring effects of snake envenomation on individuals residing in rural Camarines Sur. Several key conclusions can be drawn:

1. The lived experiences and quality of life of snake envenoming survivors in rural areas of Camarines Sur reveal that envenomation is not merely a physical health crisis but a multifaceted life-altering event marked by sudden environmental hazards, prolonged physical recovery, psychological distress, disrupted livelihoods, and reliance on family, faith, and community for coping and survival.
2. A comprehensive and targeted intervention plan is essential to improve the quality of life of snake envenoming survivors, addressing not only their physical and emotional recovery but also enhancing community preparedness, access to healthcare services, and socioeconomic reintegration.

Recommendations

Based on the findings of this study, several key areas require attention to enhance the quality of life of snake envenoming survivors in rural areas in the Province of Camarines Sur. The following recommendations are proposed:

1. Local health authorities, barangay leaders, and other relevant government agencies should enhance community-based snakebite prevention and response initiatives. This includes implementing educational campaigns that emphasize the risks of sudden snakebites during routine activities such as farming, walking, or doing household chores. Communities should be educated on the dangers of harmful traditional practices and trained in proper first aid measures. Environmental safety improvements like clearing overgrown areas and installing adequate lighting, should also be promoted. Additionally, increasing access to emergency health services and transportation, particularly in remote areas, is crucial in ensuring timely medical intervention.
2. A comprehensive, survivor-centered intervention program should be developed and institutionalized. This should include access to physical rehabilitation services, trauma-informed mental health support, and livelihood restoration programs for survivors who are unable to return to their previous work. In addition, caregiver training and support should be integrated to aid families in long-term care. These efforts aim to restore the health, functionality, and productivity of survivors and help them reintegrate meaningfully into their communities.

Implications

The findings of this study have significant implications where interventions and reforms can be most impactful:

1. Strengthening the preventive and emergency response efforts is essential in significantly reducing the incidence and severity of snake envenomation cases in rural communities. Empowering residents with knowledge and preparedness can disrupt the cycle of delayed treatment and reliance on unsafe traditional methods. This approach may further guide the development of localized health policies and culturally appropriate emergency protocols tailored to rural areas such as those in Camarines Sur.
2. Implementing an inclusive intervention program can improve long-term recovery, psychological well-being, and economic resilience among snake envenoming survivors. It reflects the necessity of adopting a holistic and integrated healthcare approach that addresses the full spectrum of survivor needs beyond emergency treatment. This also highlights the importance of collaboration between health, social, and local government sectors in supporting survivor rehabilitation and strengthening community capacity for inclusive recovery.

Suggestions for Further Studies

The following study subjects are recommended for additional investigation:

1. A Quantitative Assessment of the Long-Term Physical Disabilities Among Snake Envenoming Survivors in Rural Philippines
2. Evaluating the Effectiveness of Community-Based Snakebite First Aid Training Programs in Reducing Morbidity in Rural Areas
3. An Exploratory Study on the Role of Traditional Healers in Snakebite Management in Rural Filipino Communities
4. Access and Utilization of Antivenom in Remote Barangays: A Policy Gap Analysis
5. Perceptions and Practices of Rural Health Workers on Snakebite Management: Implications for Training and Capacity Building

Literature Cited

1. Abarca, Charie. (2024). **‘Crucial regional hospitals’ must have antivenom supply—Raffy Tulfo.** Inquirer.net. Retrieved from <https://newsinfo.inquirer.net/1937703/crucial-regional-hospitals-must-have-antivenom-supply-raffy-tulfo>
2. Abdullahi, S.A., Torsen, E., Balla, A., Hamman, N. (2025). **Assessing the Impact of Hospital and Traditional-based Treatments on Snakebite Envenoming in Kaltungo: A Mathematical Modeling Approach.** Retrieved from https://www.researchgate.net/publication/390446430_Assessing_the_Impact_of_Hospital_and_Traditional-based_Treatments_on_Snakebite_Envenoming_in_Kaltungo_A_Mathematical_Modeling_Approach
3. Afroz, A., Siddiquea, B.N., Chowdhury, H.A., Jackson, T.N.W., Watt, A.D. (2024). **Snakebite envenoming: A systematic review and meta-analysis of global morbidity and mortality.** Retrieved from <https://doi.org/10.1371/journal.pntd.0012080>
4. Aglanu, L. M., Amuasi, J. H., Schut, B. A., Steinhorst, J., Beyuo, A., Dari, C. D., Agbogbey, M. K., Blankson, E. S., Punguyire, D., Lalloo, D. G., Blessmann, J., Abass, K. M., Harrison, R. A., & Stienstra, Y. (2022). **What the snake leaves in its wake: Functional limitations and disabilities among snakebite victims in Ghanaian communities.** PLoS Neglected Tropical Diseases, 16(5), e0010322. Retrieved from <https://doi.org/10.1371/journal.pntd.0010322>
5. Ahmadi, F., & Ahmadi, N. (2021). **Sanctification in coping from a cultural perspective.** Illness Crisis & Loss, 30(3), 465–488. Retrieved from <https://doi.org/10.1177/1054137320982203>
6. Alamoudi, M. (2024). **ESTIMATING PATIENTS’ SATISFACTION IN HEALTHCARE SECTOR USING MULTIPLE REGRESSION ANALYSIS.** Advances and Applications in Statistics, 92(2), 273–302. Retrieved from <https://doi.org/10.17654/0972361725013>
7. Algorani EB, Gupta V. (2023). **Coping Mechanisms.** Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK559031/>
8. Amazona, Roel. (2024). **Eastern Visayas officials seek more anti-venom supplies.** Retrieved from <https://www.pna.gov.ph/articles/1224373#:~:text=TACLOBAN%20CITY%20%E2%80%93%20Rising%20cases%20of,area%20far%20from%20primary%20hospitals>.
9. Aoki, Y., Paghubasan, J., Tiglao, P. J., Sarmiento, M. J., Arrieta, R., Tan, M. A., Sarsalijo, M. S., Aquino, G. J. B., Beronilla-Uraga, M. G., Comandante, J. D. L., Santamaria, E. B., Malijan, G. M. B., Suzuki, S., Takahashi, K., Yamano, S., Smith, C., Hayakawa, K., Tasaki, O., Agosto, L. C., . . . Ariyoshi, K. (2025). **Characteristics of snakebite patients due to Naja samarensis in the Philippines: a prospective hospital-based study.** Transactions of the Royal Society of Tropical Medicine and Hygiene. Retrieved from <https://doi.org/10.1093/trstmh/trae110>
10. Arias-Rodríguez, J., Gutiérrez, J.M. (2020). **Circumstances and Consequences of Snakebite Envenomings: A Qualitative Study in South-Eastern Costa Rica.** Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC7020421/pdf/toxins-12-00045.pdf>
11. Arrieta, R., Aoki , Y., Tan, M., Sarsalijo, M., , M.J., Paghubasan, J., Tiglao, P.J., Yoshimura, K., Sakai, A., Agosto, L. (2024). **A fatal snakebite envenomation due to King cobra (Ophiophagus hannah) in the Eastern Visayas, Philippines.** Retrieved from <https://pubmed.ncbi.nlm.nih.gov/38723869/>
12. Barman, D. D. (2025). **A review of the management strategies and practices in snake envenomation.** Journal of Indian

- Academy of Forensic Medicine. Retrieved from <https://doi.org/10.1177/09710973251327767>
13. Bawaskar, H. S., Bawaskar, P. H., & Bawaskar, P. H. (2021). **The global burden of snake bite envenoming.** The journal of the Royal College of Physicians of Edinburgh, 51(1), 7–8. Retrieved from <https://doi.org/10.4997/JRCPE.2021.102>
14. Bayasen-Yodong, J., De Leon, M.L., Alzate, S., Catbagan, N.B. (2022). **Delayed Neurologic Effect of Pit Viper Envenomation in Cordillera, Philippines: A Case Report.** Retrieved from <https://www.apamt.org/wp-content/uploads/2024/06/OP13-Delayed-Neurologic-Effect-of-Pit-Viper-Envenomation-in-Cordillera-Philippines-A-Case-Report.pdf>
15. Braun, V., & Clarke, V. (2008). **Using thematic analysis in psychology.** Qualitative Research in Psychology, 3(2), 77–101. Retrieved from <https://doi.org/10.1191/1478088706qp063oa>
16. Brenes-Chacon, H., Gutierrez, J., Camacho-Badilla, K., Soriano-Fallas, A., Ulloa-Gutierrez, R., Valverde, K., Avila-Aguero, M.L. (2020). **Long-term sequelae secondary to snakebite envenoming: a single centre retrospective study in a Costa Rican paediatric hospital.** Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC7497519/pdf/bmjpo-2020-000735.pdf>
17. Brown, J., & Jones, E. (2022, July). **Improving results for digital therapeutics with social support.** Retrieved from <http://www.societyforpsychotherapy.org/improving-results-for-digital-therapeutics-with-social-support>
18. Calhoun, C. D., Stone, K. J., Cobb, A. R., Patterson, M. W., Danielson, C. K., & Bendezú, J. J. (2022). **The Role of Social Support in Coping with Psychological Trauma: An Integrated Biopsychosocial Model for Posttraumatic Stress Recovery.** Psychiatric Quarterly, 93(4), 949–970. Retrieved from <https://doi.org/10.1007/s11126-022-10003-w>
19. Castillo, D. a. E., Seneci, L., Chowdhury, A., Rimando, M. G., & Fry, B. G. (2025). **Bite first, bleed later: How Philippine *trimeresurus* pit viper venoms hijack blood clotting.** Toxins, 17(4), 185. Retrieved from <https://doi.org/10.3390/toxins17040185>
20. Castleberry, A., & Nolen, A. (2018). **Thematic analysis is a qualitative descriptive approach to nursing research.** Journal of Nursing Scholarship. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S1877129717300606?via%3Dihub>
21. Chan, Y.W., Tan, K.Y., Tan, C.H. (2022). **Preclinical assessment of VPEAV, a new trivalent antivenom for elapid snakebite envenoming in the Philippines: Proteomics, immunoreactivity and toxicity neutralization.** Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0041010122002938?via%3Dihub>
22. Chen, Y., Fu, W., Song, X., Hu, Y., Wang, J., Hao, W., He, L., Diané, M., Souaré, I. S., Guo, W., Lv, C., Han, X., & Yan, S. (2024). **The bridge relationships of PTSD and depression symptoms among snakebite victims: a cross-sectional community-based survey.** BMC Psychology, 12(1). Retrieved from <https://doi.org/10.1186/s40359-024-01964-7>
23. Chuanzhu Lv, Zihui Lei, Yan-Tzu Hu, Xinyue Song, Juntao Wang, Wenjie Hao, Lan-Fang He, Yu Chen, Xiaotong Han, Yong Gan, Shijiao Yan. (2023). **A Bibliometric Study on Global Snakebite Research Indexed in Web of Science.** Retrieved from <https://www.sspbjournal.org/journals/international-journal-of-public-health/articles/10.3389/ijph.2023.1606311/full>
24. Creswell, J. W. (2009). **Research design: Qualitative, quantitative, and mixed methods approaches.** SAGE Publications, Inc. Retrieved from https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf
25. Creswell, J. & Poth, C. (2018). **Qualitative Inquiry & Research Design: Choosing Among Five Approaches.** Retrieved from https://pubhtml5.com/enuk/cykh/Creswell_and_Poth%2C_2018%2C_Qualitative_Inquiry_4th/
26. Dodgson, J. E. (2019). **Reflexivity in qualitative research.** Journal of Human Lactation, 35(2), 220–222. Retrieved from <https://doi.org/10.1177/0890334419830990>
27. Duda, R., Monteiro, W., Giles-Vernick, T. (2021). **Integrating lay knowledge and practice into snakebite prevention and care in central Africa, a hotspot for envenomation.** Retrieved from <https://www.sciencedirect.com/science/article/pii/S2590171021000138>
28. Duangkan, C., & Matthews, A. K. (2021). **Application of Ferrans et al.'s conceptual model of health-related quality of life: A systematic review.** Research in Nursing & Health, 44(3), 490–512. Retrieved from <https://doi.org/10.1002/nur.22120>
29. Ehsan, A., Klaas, H. S., Bastianen, A., Spini, D., Life Course and Inequality Research Centre, Institute for Social Sciences, University of Lausanne, & Swiss National Centre of Competence in Research LIVES, University of Lausanne. (2019). **Social capital and health: A systematic review of systematic reviews.** In SSM - Population Health [Journal-article]. Retrieved from <https://doi.org/10.1016/j.ssmph.2019.100425>
30. Eid,E., Awaji, M.A., Nasarat, H., and Alhiyasat, A. (2021). **A Perceptions and Knowledge Towards Snakes: a Study from Jordan.** Retrieved from https://www.herpconbio.org/Volume_16/Issue_2/Eid_etal_2021.pdf
31. Farheen, C., Rahman, A. K. M. F., Ghose, A., Amin, M. R., Rahman, A. S. M. M., Sayeed, A. A., Rahaman, F. M. A., Howlader, C., Khan, S., Rashid, R., Chowdhury, N., Debi, G. R., Rahman, M. S., & Faiz, M. A. (2025). **Health literacy among the rural Bangladeshi population on first aid measures and prevention of snakebite.** Transactions of the Royal Society of Tropical Medicine and Hygiene, trae130. Advance online publication. Retrieved from <https://doi.org/10.1093/trstmh/trae130>
32. Fernandez, M.L. (2021). **Snake expert lectures at UPV.** Retrieved from <https://www.upv.edu.ph/index.php/news/snake-expert-lectures-at-upv>
33. Ferrans, C. E., Zerwic, J. J., Wilbur, J. E., & Larson, J. L. (2005). **Conceptual model of health-related quality of life.** Journal

- of Nursing Scholarship, 37(4), 336–342. Retrieved from <https://doi.org/10.1111/j.1547-5069.2005.00058.x>
34. Ferrans, C. E., Zerwic, J. J., Wilbur, J. E., & Marchiondo, L. A. (2005). **Conceptual model of health-related quality of life.** Journal of Nursing Scholarship, 37(4), 336–342. Retrieved from <https://doi.org/10.1111/j.1547-5069.2005.tb00288.x>
35. Froyalde, J. (2022). **Press Release No. 05-2022: BMC Poison Control Center's Statement on the Unavailability of Antivenin.** Retrieved from [https://bmc.doh.gov.ph/article/20220112/press-release-no-05-2022-bmc-poison-control-centers-statement-unavailability#:~:text=The%20Bicol%20Medical%20Center%20Poison, and%20four%20\(4\)%20mortalities](https://bmc.doh.gov.ph/article/20220112/press-release-no-05-2022-bmc-poison-control-centers-statement-unavailability#:~:text=The%20Bicol%20Medical%20Center%20Poison, and%20four%20(4)%20mortalities)
36. Funes, I. F., Youssef, P., Brock University, & Fernandez, E. A. (2024). **Snakebites and their Impact on Disability.** Medical Research Archives. Retrieved from <https://doi.org/10.18103/mra.v12i6.5556>
37. Gajbhiye, R., Munshi, H., Bawaskar, H. (2023). **National programme for prevention & control of snakebite in India: Key challenges & recommendations.** Retrieved from https://journals.lww.com/ijmr/fulltext/2023/04000/national_programme_for_prevention___control_of.7.aspx
38. GBD 2019 Snakebite Envenomation Collaborators. (2022). Global mortality of **snakebite envenoming between 1990 and 2019.** *Nature Communications*, 13(1), 6160. <https://doi.org/10.1038/s41467-022-33627-9>
39. Gophane, S. S., More, K., Gadade, A., & Gawai, N. (2025). **A review: Snake bite.** International Journal for Research in Applied Science & Engineering Technology (IJRASET), 13(IV), 3401-3406. Retrieved from [.22214/ijraset.2025.68935](https://22214/ijraset.2025.68935)
40. Gonzalez, A. (2024, November 26). **Trusting in Divine Rescue: A reflection on Psalm 55:16.** Medium. Retrieved from <https://medium.com/@adrianne.gonzalez/trusting-in-divine-rescue-a-reflection-on-psalm-55-16-dfdae95d5621>
41. Gou, X., Shang, H., Li, L., Yang, L., & Tian, W. (2024). **A study into the present situation and factors influencing post-traumatic stress disorder in patients affected by venomous snake bites in Guizhou, China.** Retrieved from <https://doi.org/10.54029/2024trr>
42. Habib, Z. G., Salihu, A. S., Hamza, M., Yakasai, A. M., Iliyasu, G., Yola, I. M., Gudaji, M. I., Abubakar, S. B., & Habib, A. G. (2020). **Posttraumatic stress disorder and psycho-social impairment following snakebite in Northeastern Nigeria.** The International Journal of Psychiatry in Medicine, 56(2), 97–115. Retrieved from <https://doi.org/10.1177/0091217420913400>
43. Hakizimana, D., MacDonald, L. E., Kampire, H. T., Bonaventure, M., Tadesse, M., Murara, E., Dusabe, L., Ishema, L., & Schurer, J. M. (2024). **Snakebite incidence and healthcare-seeking behaviors in Eastern Province, Rwanda: A cross-sectional study.** PLoS Neglected Tropical Diseases, 18(8), e0012378. <https://doi.org/10.1371/journal.pntd.0012378>
44. Hamza, M. (2022). **Impact of COVID-19 pandemic on care of victims of snakebite.** Retrieved from <https://doi.org/10.4081/pjm.2022.183>
45. Ho, L., and Limpaecher, A. (2022). **What is Phenomenological Research Design? Essential Guide to Coding Qualitative Data.** Retrieved from <https://delvetool.com/blog/phenomenology>
46. Huang, T.-I., Hsieh, C.-L. (2020). **Effect of Traditional Chinese Medicine on Long-Term Outcomes of Snakebite in Taiwan.** Retrieved from <https://www.mdpi.com/2072-6651/12/2/132>
47. Huang, Y.-K., Chen, Y.-C., Liu, C.-C., Cheng, H.-C., Tu, A. T., & Chang, K.-C. (2022). **Cerebral complications of snakebite envenoming: Case studies.** Toxins, 14(7), 436. Retrieved from <https://doi.org/10.3390/toxins14070436>
48. Jadon, R., Sood, R., Bauddh, N., Ray, A., Soneja, M., Agarwal, P., Wig, N. (2021). **Ambispective study of clinical picture, management practices and outcome of snake bite patients at tertiary care centre in Northern India.** Retrieved from https://journals.lww.com/jfmmpc/fulltext/2021/10020/ambispective_study_of_clinical_picture,_management.56.aspx
49. Jayawardana, S., Arambepola, C., Chang, T., & Gnanathasan, A. (2020). **Prevalence, vulnerability and epidemiological characteristics of snakebite in agricultural settings in rural Sri Lanka: A population-based study from South Asia.** PLoS ONE, 15(12), e0243991. Retrieved from <https://doi.org/10.1371/journal.pone.0243991>
50. Jayawardana, S., Arambepola, C., Chang, T., Gnanathasan, A. (2018). **Long-term health complications following snake envenoming.** Retrieved from <https://www.dovepress.com/article/download/39019>
51. Judah, Viola. (2023). **A Brief Introduction to Post Traumatic Growth.** Retrieved from <https://www.gjcpp.org/en/resource.php?issue=46&resource=244>
52. Kasturiratne, A., Lalloo, D. G., & De Silva, H. J. (2021). **Chronic health effects and cost of snakebite.** In Raymond Norton, *Toxicon: X* (Vols. 9–10, p. 100074). Retrieved from <https://doi.org/10.1016/j.toxcx.2021.100074>
53. Kim, E. Y., & Chang, S. O. (2022). **Exploring nurse perceptions and experiences of resilience: a meta-synthesis study.** BMC Nursing, 21(1). Retrieved from <https://doi.org/10.1186/s12912-021-00803-z>
54. Kodati, R., Muthu, V., Agarwal, R., Dhooria, S., Aggarwal, A.N, Prasad, K.T., Behera, ., Sehgal, I.S. (2022). **Long-term Survival and Quality of Life among Survivors Discharged from a Respiratory ICU in North India: A Prospective Study.** Retrieved from <https://www.ijecm.org/doi/pdf/10.5005/jp-journals-10071-24321>
55. Kopel, Jonathan. (2019). **Near-death experience in medicine.** Retrieved from <https://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC6442886&blobtype=pdf>
56. Korstjens, I., & Moser, A. (2018). **Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing.** European Journal of General Practice, 24(1), 120–124. Retrieved from <https://doi.org/10.1080/13814788.2017.1375092>

57. Lalani, N., Drolet, J. L., McDonald-Harker, C., Brown, M. R. G., Brett-MacLean, P., Agyapong, V. I., Greenshaw, A. J., & Silverstone, P. H. (2021). **Nurturing spiritual resilience to promote post-disaster community recovery: the 2016 Alberta wildfire in Canada.** *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.682558>
58. Laughlin L, Theakston RDG, Tuazon ML, Padre L, Watt G. (2025). **Bites by the Philippine cobra (Naja naja Philippinensis): prominent neurotoxicity with minimal local signs.** Retrieved from <https://www.herdin.ph/index.php?view=research&cid=16835>
59. Lindseth, A., & Norberg, A. (2022). **A phenomenological hermeneutical method for researching lived experience.** *Scandinavian Journal of Caring Sciences*, 36(3), 883–890. Retrieved from <https://doi.org/10.1111/scs.13039>
60. Margono, F., Outwater, A. H., Wilson, M. L., Howell, K. M., & Bärnighausen, T. (2022). **Snakebite treatment in Tanzania: Identifying gaps in community practices and hospital resources.** *International Journal of Environmental Research and Public Health*, 19(8), 4701. Retrieved from <https://doi.org/10.3390/ijerph19084701>
61. Martín, G., Yáñez-Arenas, C., Rangel-Camacho, R., Murray, K. A., Goldstein, E., Iwamura, T., & Chiappa-Carrara, X. (2021). **Implications of global environmental change for the burden of snakebite.** *Toxicon X*, 9–10, 100069. Retrieved from <https://doi.org/10.1016/j.toxcx.2021.100069>
62. Meniano, Sarwell (2024). **DOH-E. Visayas cites challenges in securing anti-venom vaccines.** Retrieved from <https://www.pna.gov.ph/articles/1228091>
63. Moos, B., Williams, D., Bolon, I., Mupfasoni, D., Abela-Ridder, B., & De Castaneda, R. R. (2021). **A scoping review of current practices on community engagement in rural East Africa: Recommendations for snakebite envenoming.** *Toxicon X*, 11, 100073. Retrieved from <https://doi.org/10.1016/j.toxcx.2021.100073>
64. Mutya, R., & Inocian, E. (2024). **Knowledge, Attitude, and Practices Toward Snakes and Snakebites among Non-Medical College Students in Cebu, Philippines: A Mixed Method Approach.** *Biosaintifika Journal of Biology & Biology Education*, 16(2), 285–296. Retrieved from <https://doi.org/10.15294/biosaintifika.v16i2.8383>
65. N'Krumah, T.A.S.R., Koné, B.V., Koffi, Y.D., Coulibaly, D.I., Tall, A., Koné, S., Toppino, S., Stojkovic, M., Bonfoh, B., Junghanss, T. (2025). **Survey on the burden, epidemiological and clinical characteristics of snakebite envenoming in the Health Demographic Surveillance System (HDSS) of Taabo (Southern Côte d'Ivoire).** Retrieved from <https://pubmed.ncbi.nlm.nih.gov/40193400/>
66. Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2023). **A Step-by-Step process of thematic analysis to develop a conceptual model in qualitative research.** *International Journal of Qualitative Methods*, 22. <https://doi.org/10.1177/16094069231205789>
67. Nineteenth Congress Of The Republic Of The Philippines. (2024, April 16). **A Resolution Directing the Senate Committee on Health And Demography to Conduct an Inquiry, in Aid Of Legislation, on the Reported Need to Address the Lack of Anti-Venom Supplies and Trained Personnel Across All Regional Hospitals in the Philippines.** Retrieved from <https://legacy.senate.gov.ph/lisdata/4394439900!.pdf>
68. Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2021). **Thematic analysis: striving to meet the trustworthiness criteria.** International journal of qualitative methods. Retrieved from <https://journals.sagepub.com/doi/10.1177/1609406917733847>.
69. Nur, K. R. M., Hadi Kurniyawan, E., Dwi Puja Lestari, M., Ayuning Tyas, A., Salzabilla Flaurenza, S., Ayu Setyaningrum, R., & Dewi, K. (2023). **Management of Snake Bites in the Agricultural Sector.** *Health and Technology Journal (HTechJ)*, 1(6), 671–681. Retrieved from <https://doi.org/10.53713/htechj.v1i6.131>
70. Ochoa, C., Pittavino, M., Babo Martins, S. **Estimating and predicting snakebite risk in the Terai region of Nepal through a high-resolution geospatial and One Health approach.** *Sci Rep* 11, 23868 (2021). Retrieved from <https://doi.org/10.1038/s41598-021-03301-z>
71. Oliverio, Niña Mae. (2023). **Cobras in the Philippines: What you should know about them.** Retrieved from <https://cebudailynews.inquirer.net/520916/cobras-in-the-philippines-what-you-should-know-about-them>
72. Paghubasan, J., Aoki, Y., Tiglao, P.J., Sarmiento, M.J., Tan, M., Sarsalijo, M., Aquino, G.J., Comandante, J.D., Santamaria, E., Takahashi, K., Smith, C., Ariyoshi, K., Agosto, L., Warrell, D. (2023). **A case series of samar cobra, Naja samarensis Peters, 1861 (Elapidae) envenomation.** Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0041010122003592>
73. Paghubasan, J., Tiglao, P.J., Aoki, Y., Tan, M., Sarsalijo, M., Aquino, G.J., Beronilla-Uraga, M.G., Agosto, L. (2024). **Neurotoxic snakebite envenomation treated with Philippine cobra antivenom in the eastern Visayas: a descriptive study between 2016 and 2020.** Retrieved from <https://academic.oup.com/toxres/article-abstract/13/3/tfae088/7690219?redirectedFrom=fulltext&login=false>
74. Palasuberniam, P., Tan, KY., Chan, YW., Blanco, FB., Tan, CH. (2023). **Decomplexation proteomic analysis and purity assessment of a biologic for snakebite envenoming: Philippine Cobra Antivenom.** Retrieved from <https://academic.oup.com/trstmh/article-abstract/117/6/428/6972591?redirectedFrom=PDF>
75. Parker, C. Scott, S., Geddes, A. (2020). **Snowball Sampling.** Retrieved from

- https://eprints.glos.ac.uk/6781/1/6781%20Parker%20and%20Scott%20%282019%29%20Snowball%20Sampling_Peer%20reviewed%20pre-copy%20edited%20version.pdf
76. Patikorn C, Ismail AK, Abidin SAZ. (2022). **Situation of snakebite, antivenom market and access to antivenoms in ASEAN countries**. BMJ Global Health;7:e007639. Retrieved from doi:10.1136/bmjgh-2021-007639
77. Patil, M. (2024). **Benefits of prayer and meditation on mental health**. NY Mental Health Center. Retrieved from from <https://nymentalhealthcenter.com/benefits-of-prayer-and-meditation-on-mental-health/#:~:text=Prayer%20and%20Mental%20Health,dealing%20with%20mental%20health%20issues>.
78. PhilAtlas. (2024). **Camarines Sur**. Retrieved from <https://www.philatlas.com/luzon/r05/camarines-sur.html>
79. Philippine Statistics Authority. (2020) . **Rural Area**. Retrieved from <https://psa.gov.ph/content/rural-area>
80. Pinho, B. (2024). **Venomous Snakes May Spread into Vulnerable Communities because of Climate Change**. Retrieved from <https://www.scientificamerican.com/article/venomous-snakes-are-spreading-because-of-climate-change/>
81. Pintor, A. F. V., Ray, N., Longbottom, J., Bravo-Vega, C. A., Yousefi, M., Murray, K. A., Ediriweera, D. S., Diggle, P. J., World Health Organization, Australian Institute of Tropical Health and Medicine, GeoHealth Group, Institute of Global Health, Institute for Environmental Sciences, Department of Vector Biology, Centre for Health Informatics, Computing and Statistics, Research Group in Mathematical and Computational Biology (BIOMAC), School of Biology, MRC Centre for Global Infectious Disease Analysis, MRC Unit the Gambia at London School of Hygiene and Tropical Medicine, & Health Data Science Unit. (2021). **Addressing the global snakebite crisis with geo-spatial analyses – Recent advances and future direction**. In Toxicon:X (Vol. 11, p. 100076) [Journal-article]. Retrieved from <https://doi.org/10.1016/j.toxcx.2021.100076>
82. Ratnarathorn, N., Sanunsilp, N., Laoungbua, P., Tawan, T., Sumontha, M., Kongrit, C., & Thaweepworadej, P. (2024). **Species richness, seasonality, and mortality of snakes in human-snake conflicts in Thailand: Insights from citizen science data**. Biological Conservation, 294, 110603. Retrieved from <https://doi.org/10.1016/j.biocon.2024.110603>
83. Reid, S. (2024, November 18). **Social support for stress relief - HelpGuide.org**. HelpGuide.org. Retrieved from <https://www.helpguide.org/mental-health/stress/social-support-for-stress-relief>
84. Resiere, D., Mehdaoui, H., & Neviere, R. (2022). **Inflammation and Oxidative stress in snakebite envenomation: A Brief descriptive review and clinical implications**. Toxins, 14(11), 802. Retrieved from <https://doi.org/10.3390/toxins14110802>
85. Richardson, G. E. (2002). **Quantum change: When epiphanies and sudden insights transform ordinary lives**. Journal of Counseling & Development, 80(2), 186–194. Retrieved from <https://doi.org/10.1002/j.1556-6676.2002.tb00180.x>
86. Richardson, G. E. (2002). **The metatheory of resilience and resiliency**. Journal of Clinical Psychology, 58(3), 307–321. Retrieved from <https://doi.org/10.1002/jclp.10020>
87. Roberts, N. et al. (2022). **Global mortality of snakebite envenoming between 1990 and 2019**. Retrieved from <https://www.nature.com/articles/s41467-022-33627-9.pdf>
88. Roberts, N., Johnson, E., Zeng, S., Hamilton, E., Abdoli, A., Alahdab, F., Alipour, V., Ancuceanu, R., Andrei, C., Anvari, D., Arabloo, J., Ausloos, M., Awedew, A., Badiye, A., Bakkannavar, S., Bhalla, A., Bhardwaj, N., Bhardwaj, P., Maled, V., Manafi, N., Marczak, L., Menezes, R., Meretoja, T., Miller, T., Mohammadian-Hafshejani, A., Mokdad, A., Monteiro, F., Moradi, M., Nayak, V., Nguyen, C., Nguyen, H., Nuñez-Samudio, V., Ostroff, S., Padubidri, J., Pham, H., Pinheiro, M., Pirestani, M., Radfar, A., Rahimi-Movaghhar, V., Rao, S., Rastogi, P., Rawaf, D., Rawaf, S., Reiner, R. J., Sahebkar, A., Samy, A., Sawhney, M., Schwebel, D., Senthilkumaran, S., Shaikh, M., Skryabin, V., Skryabina, A., Soheili, A., Stokes, M., Thapar, R., Tovani-Palone, M., Tran, B., & Zahiruddin, S. (2020). **Mortality from snakebite envenomation: an analysis from the Global Burden of Disease Study 2019**. The Lancet, 396, 1204-1222. Retrieved from <https://www.researchsquare.com/article/rs-1021472/v1>
89. Ruslin, Mashuri, S., Rasak, M.S.A., Alhabisy, F., Syam, H. (2022). **Semi-structured Interview: A Methodological Reflection on the Development of a Qualitative Research Instrument in Educational Studies**. Retrieved from <https://www.iosrjournals.org/iosr-jrme/papers/Vol-12%20Issue-1/Ser-5/E1201052229.pdf>
90. Salva, M., Ganir, F. D., Lacanilao, R. B. T., Simon, J. R. D., Torres, G. D. B., Yadao, M. E. G. P., & et al. (2023). **Pantawid pamilyang Pilipino program: An assessment**. International Journal of Research Studies in Education, 1–16. Retrieved from <https://doi.org/10.5861/ijrse.2023.1001>
91. Sarmiento, B. (2020, October 2). **A Philippine tribe's plant-based medical tradition gets its moment**. Mongabay Environmental News. Retrieved from <https://news.mongabay.com/2020/10/a-philippine-tribes-plant-based-medical-tradition-gets-its-moment/>
92. Sasidharan, P., Kaeley, N., Mahala, P., Jose, J. R., Shankar, T., Santhalingan, S., Sharma, A., Kumar, B., Kumar, M.A., Dhar, M. (2025). **Clinical and demographic profiling of snakebite envenomation in a tertiary care centre in northern India**. Retrieved from <https://intjem.biomedcentral.com/articles/10.1186/s12245-024-00796-x>
93. Schioldann, E., Mahmood, M. A., Kyaw, M. M., Halliday, D., Thwin, K. T., Chit, N. N., Cumming, R., Bacon, D., Alfred, S., White, J., Warrell, D., & Peh, C. A. (2018). **Why snakebite patients in Myanmar seek traditional healers despite availability of biomedical care at hospitals?** Community perspectives on reasons. PLoS Neglected Tropical Diseases, 12(2), e0006299. Retrieved from <https://doi.org/10.1371/journal.pntd.0006299>

94. Schurer, J. M., Tumusiime, D., Mbarubukeye, M., Nyakarahuka, L., & Pittet, M. (2023). **Economic burden of snakebite envenoming in Rwanda: A cross-sectional study.** PLoS Neglected Tropical Diseases, 17(11), e0011768. Retrieved from <https://doi.org/10.1371/journal.pntd.0011768>
95. Seifert, S. A., Armitage, J. O., & Sanchez, E. E. (2022). **Snake envenomation.** New England Journal of Medicine, 386(1), 68-78.
96. Siddiqui, M. A., et al. (2024). **Family stress management.** In Indian Journal of Psychiatry, Indian Journal of Psychiatry (Vols. 66–66, Issue Supplement 2). Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC10911333/>
97. Slawson, L. (2023). **The Philippine Cobra: One of the Deadliest Snakes in the World.** Retrieved from <https://discover.hubpages.com/animals/The-Philippine-Cobra>
98. Stewart, L. (2025). **Purposive Sampling in Qualitative Research.** Retrieved from <https://atlasti.com/research-hub/purposive-sampling>
99. Sundler, A. J., Lindberg, E., Nilsson, C., & Palmér, L. (2019). **Qualitative thematic analysis based on descriptive phenomenology.** Nursing Open, 6(3), 733–739. Retrieved from <https://doi.org/10.1002/nop2.275>
100. Tabiolo, L. P. J. J. & West Visayas State University. (2025). **Philippine local governments and their role in local governance and development.** Retrieved from <https://www.researchgate.net/publication/388258417>
101. Tan, C. H., Palasuberniam, P., Blanco, F. B., & Tan, K. Y. (2020). **Immunoreactivity and neutralization capacity of Philippine cobra antivenom against Naja philippinensis and Naja samarensis venoms.** Transactions of the Royal Society of Tropical Medicine and Hygiene, 115(1), 78–84. Retrieved from <https://doi.org/10.1093/trstmh/traa087>
102. Tansuwanarat, P., Tongpoo, A., Phongsawad, S., Sriapha, C., Wanankul, W., & Trakulsrichai, S. (2023). **A Retrospective cohort study of cobra envenomation: clinical characteristics, treatments, and outcomes.** Toxins, 15(7), 468. Retrieved from <https://doi.org/10.3390/toxins15070468>
103. Tednes, M., & Slesinger, T. L. (2024, September 10). **Evaluation and treatment of snake envenomations.** StatPearls - NCBI Bookshelf. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK553151/>
104. Tenny S., Brannan, J.M., & Brannan, G.D. (2022). **Qualitative Study.** Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK470395/>
105. Theisen-Womersley, G. & Institut de Psychologie et Education University of Neuchâtel. (2021). **Trauma and resilience among displaced populations.** Retrieved from <https://doi.org/10.1007/978-3-030-67712-1>
106. Trinh, K. (2025). **The Venomous Snakes and Research Program to Produce Antivenoms to Save the Lives of Victims are Being Poisoned by Snake Venoms in Vietnam.** Retrieved from <https://doi.org/10.47172/2965-730x.sdgsreview.v5.n03.pe02183>
107. Tupetz, A., Barcenas, L., Phillips, A., Vissoci, J., Gerardo, C. (2021). **BITES study: A qualitative analysis among emergency medicine physicians on snake envenomation management practices.** Retrieved from <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0262215>
108. Vaiyapuri, S., Kadam, P., Chandrasekharuni, G., Oliveira, I. S., Senthilkumaran, S., Salim, A., Patel, K., De Almeida Gonçalves Sachett, J., & Pucca, M. B. (2022). **Multifaceted community health education programs as powerful tools to mitigate snakebite-induced deaths, disabilities, and socioeconomic burden.** Toxicon X, 17, 100147. Retrieved from <https://doi.org/10.1007/s13201-022-00066-0>
109. Wafula, S. T., Namakula, L. N., Ninsiima, L. R., Ssekamatte, N. K., Walekhwa, A. W., Mugume, I. B., & Musoke, D. (2023). **Barriers and opportunities for improving management of snakebites: Perspectives of healthcare workers in Northern Uganda.** PLoS ONE, 18(9), e0291032. Retrieved from <https://doi.org/10.1371/journal.pone.0291032>
110. Waiddyanatha, S., Silva, A., Weerakoon, K., Siribaddana, S., & Isbister, G. K. (2022). **Long-term health effects perceived by snakebite patients in rural Sri Lanka: A cohort study.** PLoS Neglected Tropical Diseases, 16(9), e0010723. Retrieved from <https://doi.org/10.1371/journal.pntd.0010723>
111. WHOQOL Group. (1998). **Development of the World Health Organization WHOQOL-BREF quality of life assessment.** Psychological Medicine, 28(3), 551–558. 1. Retrieved from <https://doi.org/10.1017/s0033291798006667>
112. Willyard, Cassandra. (2024). **Next-generation snakebite therapies could reduce death toll.** Retrieved from <https://www.nature.com/articles/d41586-024-03818-z>
113. World Health Organization. (2020). **AUSTRALIAN WHOQOL, WHOQOL-BREF and CA-WHOQOL INSTRUMENTS User's Manual and Interpretation Guide.** Retrieved from <https://www.who.int/tools/whoqol/whoqol-bref/docs/default-source/publishing-policies/whoqol-bref/english-australian-whoqol-bref>
114. World Health Organization. (2025). **Antivenoms.** Retrieved from <https://www.who.int/teams/control-of-neglected-tropical-diseases/snakebite-envenoming/antivenoms>
115. World Health Organization (2023). **Snake envenoming.** Retrieved from <https://www.who.int/news-room/fact-sheets/detail/snakebite-envenoming>
116. World Health Organization. (2016). **GUIDELINES FOR THE MANAGEMENT OF SNAKEBITES.** Retrieved from <https://www.who.int/docs/default-source/searo/india/health-topic-pdf/who-guidance-on-management-of-snakebites.pdf?sfvrsn=552>

117. World Health Organization. (2019). **Snakebite envenoming: a strategy for prevention and control.** Retrieved from <https://www.who.int/publications/i/item/9789241515641>
118. Yang, E. and Stover, A. (2022) **Putting Lived Experience at the Center of Data Science.** Retrieved from <https://www.mdrc.org/publication/putting-lived-experience-center-data-science>
119. Yoshimura, K., Hossain, M., Tojo, B., Tieu, P., Trinh, N. N., Huy, N. T., Sato, M., & Moji, K. (2023). **Barriers to the hospital treatment among Bede snake charmers in Bangladesh with special reference to venomous snakebite.** PLoS Neglected Tropical Diseases, 17(10), e0011576. Retrieved from <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0011576>



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