Journal of Islamic Nursing, 2025, 10(1), 13-23
DOI : https://doi.org/ 10.24252/join.v10i1.56299 pISSN 2528-2549; eISSN 2545127
Received 26 March 2025, Revised 12 June 2025, Accepted 20 June 2025, Published 24 July 2025

FACTORS RELATED TO FARMERS' HEALTH SEEKING BEHAVIOURS FOLLOWING SNAKE BITE

Ruris Haristiani[1*], Rismawan Adi Yunanto[1], Baskoro Setioputro[1], Deskita Prastiwi[1]
[1]Departement of Critical Care and Emergency Nursing, Faculty of Nursing, Universitas Jember, Jember, Indonesia
*E-mail Address: rurisharistiani@unej.ac.id

Abstract

Snakebite envenomation remains a significant cause of morbidity and mortality, particularly among agricultural workers in tropical regions. This study aims to identify factors associated with farmers' health-seeking behaviours following snakebite incidents, including levels of knowledge, perceptions of illness, attitudes toward medical care, income level, and accessibility of healthcare services. This study employed a quantitative correlational descriptive design with a cross-sectional approach. Using cluster sampling, 100 farmers were recruited, and data were collected through validated questionnaires. Data analysis was conducted using the Chi-square test and Fisher's exact test. The results indicated significant associations between health-seeking behaviours and level of knowledge ($p < 0.001$), perception of illness ($p = 0.003$), accessibility of healthcare services ($p = 0.005$), income level ($p = 0.001$), and attitudes toward medical care ($p = 0.021$). Based on these findings, community-based training programs on snakebite first aid should be implemented, particularly in rural areas, to reduce delays in treatment and promote appropriate snakebite management among farmers.

Keywords: farmers; health-seeking behaviours; snakebite; snakebite management; first aid; rural healthcare

Abstrak

Gigitan ular berbisa masih merupakan penyebab penting morbiditas dan mortalitas, khususnya di kalangan pekerja pertanian di wilayah tropis. Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor yang berhubungan dengan perilaku pencarian pelayanan kesehatan pada petani setelah kejadian gigitan ular, yang meliputi tingkat pengetahuan, persepsi terhadap penyakit, sikap terhadap pelayanan medis, tingkat pendapatan, serta aksesibilitas layanan kesehatan. Penelitian ini menggunakan desain kuantitatif deskriptif korelasional dengan pendekatan potong lintang (cross-sectional). Dengan teknik cluster sampling, sebanyak 100 petani direkrut sebagai responden, dan data dikumpulkan menggunakan kuesioner yang telah tervalidasi. Analisis data dilakukan menggunakan uji Chi-square dan Fisher's exact test. Hasil penelitian menunjukkan adanya hubungan yang signifikan antara perilaku pencarian pelayanan kesehatan dengan tingkat pengetahuan ($p < 0,001$), persepsi terhadap penyakit ($p = 0,003$), aksesibilitas layanan kesehatan ($p = 0,005$), tingkat pendapatan ($p = 0,001$), serta sikap terhadap pelayanan medis ($p = 0,021$). Berdasarkan temuan tersebut, program pelatihan berbasis komunitas mengenai pertolongan pertama pada gigitan ular perlu diimplementasikan, khususnya di wilayah pedesaan, guna mengurangi keterlambatan penanganan dan meningkatkan pengelolaan gigitan ular yang tepat di kalangan petani.

Kata kunci: *petani; perilaku pencarian pelayanan kesehatan; gigitan ular; penatalaksanaan gigitan ular; pertolongan pertama; pelayanan kesehatan pedesaan*

Introduction

Snakebite envenoming remains a significant yet neglected public health concern in tropical and subtropical regions. According to the World Health Organization (WHO), an estimated 5.4 million people are bitten by snakes each year, resulting in 1.8 to 2.7 million cases of envenomation. As one of the largest tropical countries, Indonesia bears a high burden of snakebite incidents, particularly among agricultural workers (Adiwinata et al., 2021). The country is home to approximately 450 snake species. Among these, several are venomous and potentially fatal, including the viper (Russell's viper and saw-scaled viper), cobra, and krait, which are commonly found in rural environments (Yuniasih et al., 2020).

Despite the presence of these dangerous species, a study conducted in Panti District revealed that most farmers believe the snakes in their area are non-venomous, although their overall knowledge about snake species remains limited (Yunanto et al., 2022). Snakebite incidents tend to increase during the rainy season and periods of intense farming activity. Agricultural workers are particularly vulnerable due to insufficient use of protective equipment, including gloves and boots. In addition, living in open rural environments and sleeping on the floor increase the risk of nocturnal bites (Ibrahim, 2020). Data from the Panti Community Health Centre (2021) reported an average of 10 snakebite cases annually, most commonly caused by green snakes, ground snakes, and kraits (locally known as *weling*) (Yunanto et al., 2022). More recent data from January to April 2023 shows four additional cases among farmers seeking treatment at the health center, indicating persistent snakebite incidents in Panti District, Jember (Haristiani et al., 2024).

The success of snake bite treatment is linked to the victims' seeking behavior for healthcare facilities, and the decision on seeking healthcare can be influenced by the social and cultural environment. Many snake bite victims seek treatment from traditional practitioners or village healers before going to appropriate healthcare facilities (Bhargava et al., 2020). This can have negative implications because the success of snake bite treatment is heavily dependent on appropriate first aid (Das et al., 2021). Strong beliefs and widespread myths surrounding snakebites often lead individuals to choose magical or traditional treatments, which delay access to appropriate medical care. Although these approaches may seem effective in certain cases, many traditional first aid practices are now recognized as unsafe. For instance, making incisions at the bite site and attempting to extract venom by mouth can increase the absorption of toxins and worsen clinical outcomes. Furthermore, the application of harmful herbal remedies, tight tourniquets, and oral suction of venom is strongly discouraged due to their associated risks (Adiwinata et al., 2021).

In addition to pre-hospital first aid, managing snake bites requires a comprehensive and collaborative approach, extending to advanced management at healthcare facilities. Despite the publication of numerous guidelines, implementation is quite challenging, especially in rural areas. Factors worsening poor clinical outcomes include delays in patient transportation, inappropriate initial first aid management, and limited antivenom supply (Chippaux, 2017). Based on the issues, the researchers aim to analyze the factors influencing healthcare-seeking behavior for snake bite assistance among farmers: knowledge level, perception of illness, attitude towards seeking healthcare, income level, and healthcare service accessibility.

The effectiveness of snakebite treatment critically depends on victims' healthcare-seeking behavior, which is often influenced by complex sociocultural factors and individual perceptions of risk. Many snake bite victims seek treatment from traditional practitioners or village healers before going to appropriate healthcare facilities (Bhargava et al., 2020). This can have negative implications because the success of snake bite treatment is heavily dependent on appropriate first aid (Das et al., 2021). The Health Belief Model (HBM) provides a valuable framework for understanding why many snakebite victims in rural areas initially seek treatment from traditional practitioners rather than medical facilities, despite the proven dangers of delayed care (Jones et al., 2014). Farmers' decisions are shaped by their perception of susceptibility to snakebites, with many underestimating risks due to beliefs that local snakes are non-venomous (Yunanto et al., 2022), as well as their perception of severity, where cultural myths downplay the life-threatening consequences of envenomation. At the same time, perceived barriers - including cost, distance to healthcare facilities, and distrust of medical systems - often outweigh the perceived benefits of modern treatment (Chippaux, 2017). Strong beliefs and numerous myths related to snake bites lead many individuals to opt for magical-based treatments and traditional remedies, causing delays in seeking proper care. Although, in some cases, these approaches may have worked, many traditional first aid practices should no longer be applied as they can be potentially dangerous, such as making incisions and sucking the venom from the bite site, which can increase toxin absorption. Furthermore, the application of harmful herbal remedies, tight tourniquets, and mouth-suctioning of venom are strongly discouraged (Adiwinata et al., 2021).

This study examines how these HBM constructs interact with practical factors like knowledge levels, perception of illness, income, attitude towards seeking healthcare, and healthcare accessibility to shape farmers' responses to snakebites. By identifying these multidimensional determinants, we aim to develop targeted interventions that reshape risk perceptions and reduce preventable deaths through context-appropriate solutions.

Method

This research design uses a quantitative descriptive correlational research method with a cross-sectional approach. The sampling technique employed is cluster sampling with a total of 100 respondents in the Panti sub-district of Jember, divided into 4 villages: Suci Village with 31 respondents, Panti Village with 32 respondents, Serut Village with 19 respondents, and Glagahwero Village with 18 respondents. Four villages were selected to represent the agricultural

diversity and geographic distribution of snakebite riskd in Panti District. The criteria set for this study include: (1) Active farmers with/without snakebite history; (2) directly working in agricultural fields; (3) residing in the Panti sub-district. Data collection was conducted from March to May 2021 and online through a Google Form link distributed to the respondents, with coordination through the respective village farmer group leaders. The researcher prepared the Google Form sheet and included an informed consent form and a set of questionnaires used as data collection instruments. The researcher directly assisted respondents during the Google Form completion process to overcome potential issues related to digital literacy.

This study employed several validated instruments. Knowledge level was measured using a 34-item questionnaire adapted by Munawwaroh from the *Community-Based Snakebite Survey* (Mahmood et al., 2019), which covered demographic information, snakebite knowledge, prevention strategies, and first aid. The questionnaire included both single-answer and multiple-answer formats. Its content validity was evaluated by Munawwaroh through the Content Validity Index (CVI) method involving four experts, resulting in an s-CVI score of 0.99, indicating excellent content validity. Health-seeking attitudes and behaviors were measured using a 19-item questionnaire adapted by Elma Khoiratun Nafi'ah from Tiomarni Lumban Gaol (2013), which comprised components of knowledge, attitudes (using a 4-point Likert scale), and behavior. Validity and reliability had been established in prior studies, with Cronbach's alpha coefficients of 0.941 for knowledge, 0.844 for attitude, and 0.880 for behavior, reflecting strong internal consistency. Income level were assessed using criteria developed by *Badan Kependudukan dan Keluarga Berencana Nasional* (BKKBN), as cited by Pradipta (2017). While the original classification consists of five levels, this study grouped them into three simplified categories: Pre-Welfare, Welfare I, and Welfare II or higher, to enhance analytical clarity and contextual relevance. To evaluate accessibility to healthcare services and related health-seeking behavior in the context of snakebite incidents, a questionnaire adapted from Ramadhani was utilized. Finally, illness perception was assessed using a questionnaire adapted from Primanita (2011). Instrument validity was confirmed via Pearson Product Moment correlation (r table = 0.444), and the reliability test showed a Cronbach's alpha value exceeding 0.444, indicating acceptable internal consistency.

Descriptive analysis was conducted to analyze the characteristics of respondents such as gender, age, education level, and years working as farmers. Bivariate analysis was used to analyze the relationships between variables. The analysis used was non-parametric, specifically the Chi-Square test, to test the relationships or influence between two nominal or ordinal variables. Not all variables met the Chi-Square test criteria. The variables of knowledge about snake bites, pain perception, and healthcare accessibility did not meet the Chi-Square test criteria (expected count > 25%) and were analyzed using the Fisher exact test as an alternative. Attitude and income level variables met the criteria for the Chi-Square test with the variable of healthcare-seeking behavior. Decision-making regarding significant relationships was interpreted if the p-value $\leq \alpha$.
In addition, this research has obtained an ethical clearance certificate from the Health Research Ethics Committee (KEPK) of the Faculty of Nursing, Universitas Jember, with the number (94/UN25.1.14/KEPK/2021).

Results

Table 1. Characteristics of Respondents based on Gender and Highest Education

Characteristics	f	% of 100 respondents
Gender:		
Male	85	85
Female	15	15
Total	100	100
Highest Education:		
No Education	4	4
Elementary School	22	22
Junior High School	21	21
Senior High School	40	40
Bachelor's Degree	12	12
Master's Degree	1	1
Total	100	100

Source: Primary Data from Panti District

The average age of the respondents is 41 years old, with the majority being male, totaling 85 respondents (85%). The highest level of education for most respondents is junior high school graduation, with 40 individuals (40%).

Table 2. Respondents' Characteristics Based on Age and Years Working as Farmers

Characteristics	Mean	Standard Deviation	Median (Min-Max)
Age	41	10,971	-
Years Working as Farmers	-	-	10 (1-40)

Source: Primary Data from Panti District

The average age of farmers in this study is 41 years, while the median for years working as farmers is 10 years.

Table 3. Univariate Analysis of Factors Related to Health-Seeking Behavior Due to Snakebite Incidents

Health Seeking Behavior due to Snake Bites	% of 100 respondents
Medical Healthcare Services	83
Traditional Treatment	17
Level of Knowledge	
Good	73
Moderate	27
Perception of Illness	
Positive	89
Negative	11
Attitude in Seeking Healthcare	
Good	35
Moderate	54
Poor	11
Income Level	
Low	38
Moderate	34
High	28
Accessibility to Healthcare Services	
Easy	71
Difficult	29
Total	100

Source: Primary Data from Panti District

Based on the table above, the results indicated the factors influencing health-seeking behavior in four villages in the Panti sub-district: 83% of respondents chose for access to healthcare services rather than traditional treatment, 73 respondents (73%) exhibited a good level of knowledge, there was a positive perception of illness in 89% of respondents, 54 respondents displayed a moderate attitude towards seeking healthcare (54%), 38% of respondents have a low income, and 71 respondents found it easy to access healthcare services (71%).

Table 4. Relationship between Knowledge Level and Health-Seeking Behavior Following Snakebite Incidents

Farmers' Knowledge Level	Health Seeking Behavior		(%) (N=100)	P-value
	Healthcare	Traditional		
Good	67	6	83	0,000
Moderate	16	11	27	
Total			100	

Source: Primary Data from Panti District

The majority of farmers with good knowledge tend to seek healthcare assistance for snakebite incidents, with 67 individuals (67%) choosing healthcare services, while only 6 individuals (6%) decided to go for traditional treatment. Respondents with moderate knowledge levels also tend to prefer healthcare services for snakebite incidents, with 16 individuals (16%) choosing healthcare, and 11 individuals (11%) opting for traditional treatment to address snakebites.

Table 5. Relationship between Perception of Illness and Health-Seeking Behavior Following Snakebite Incidents

Perception of Illness	Health-Seeking Behavior		(%) (N=100)	*P*-value
	Healthcare	Traditional		
Positive	78	11	89	0,003
Negative	5	6	11	
Total			100	

Source: Primary Data from Panti District

The majority of farmers have a positive perception, with 89 individuals (89%) leaning towards seeking healthcare services (78 individuals or 78%) in response to snake bites, while 11 individuals (11%) tend to opt for traditional treatments. On the other hand, the remaining respondents with a negative pain perception tend to choose traditional treatments, amounting to 6 individuals (6%).

Table 6. Relationship between Perception of Illness and Health-Seeking Behavior Following Snakebite Incidents

Attitude in Seeking Healthcare	Health-Seeking Behavior		(%) (N=100)	P-value
	Healthcare	Traditional		
Good	34	1	35	0,021
Moderate	41	13	54	
Poor	8	3	11	
Total			100	

Source: Primary Data from Panti District

The attitude towards seeking healthcare assistance among the majority of the respondents is categorized as moderate. This is evident in their responses, which scored between 14-22 out of a total value of 32 in 8 questions, with the highest score being 4. In terms of moderate attitude results, when it comes to seeking healthcare assistance due to snake bites, 41 individuals (41%) tend to opt for healthcare services, while 13 individuals (13%) choose traditional medicine.

Table 7. Relationship between Income Level and Health-Seeking Behavior Following Snakebite Incidents

Income Level	Health-Seeking Behavior		(%) (N=100)	*P*-value
	Healthcare	Traditional		
Low	25	13	38	

Moderate	31	3	34	0,021
High	27	1	28	
Total			100	

Source: Primary Data from Panti District

The majority of the respondents have a low-income level, and when it comes to selecting healthcare assistance due to snake bites, 25 individuals (25%) tend to choose healthcare services, while 13 individuals (13%) opt for traditional medicine. Following this, respondents with a moderate-income level, totaling 34 individuals (34%), mostly choose medical healthcare services, with 31 individuals selecting this option, while 3 individuals (3%) prefer traditional medicine. Finally, there are 28 individuals (28%) with a high-income level with only 1 tend to choose traditional medicine and the majority (27 individuals) choose healthcare services.

Table 8. Relationship between Accessibility to Healthcare Services and Health-Seeking Behavior Following Snakebite Incidents

Accessibility to Healthcare Services	Health-Seeking Behavior		(%) (N=100)	*P*-value
	Healthcare	Traditional		
Easy	64	7	71	
Difficult	19	10	29	0,005
Total			100	

Source: Primary Data from Panti District

The majority of the respondents have easy access to healthcare services, with 71 individuals (71%) falling into this category. When it comes to choosing healthcare assistance due to snake bites, 64 individuals (64%) tend to opt for healthcare services, while 7 individuals (7%) choose traditional medicine.

Discussions

Characteristics of Respondents

The gender distribution among farmers in the Panti District of Jember is predominantly male, as the occupation of farming typically requires physical strength and hard work, which tends to be more associated with males (Kurniasih et al., 2017). This finding is consistent with a study by Mukti (2017) and colleagues, which also indicated a predominance of male respondents in the farming sector. In terms of age, the average age of the farmers is 41 years, which falls within the productive age range for work. Cepriadi and Yulida's research similarly found that the majority of farmers were between the ages of 31 and 40, constituting 53% of their sample. This age group is considered productive, as individuals in this range are expected to have both physical strength and good decision-making abilities, which are essential in the farming process (Kurniasih et al., 2017).

The median duration of working as a farmer is 10.5 years, with a minimum of 1 year and a maximum of 40 years. This suggests that, on average, individuals become farmers during their productive years. This finding aligns with Susilowati's research, which indicated that individuals as young as 15 years old may start working as farmers, and some farmers continue working in this occupation beyond the age of 60, as long as they remain physically capable (Kurniasih et al., 2017). Sulistyaningrum, in 2016, also mentioned that the duration of working as a farmer influences a farmer's knowledge and work experience in dealing with various agricultural issues, including health-related problems like snakebites.

Regarding the highest level of education, most farmers in the Panti District have completed their education up to the high school level (SMA), indicating a relatively high level of education among farmers in the area. This finding is in line with research by Rhondi and Adi in 2018, which noted that many farmers nowadays have higher levels of education, in part due to landowners actively participating in farming activities, leading to a higher average education level among farmers. A study by Rahmatulloh and colleagues in 2019 emphasized the importance of education among farmers in handling initial snakebite incidents, as it can significantly impact the success of first aid measures.

The Relationship Between Farmers' Knowledge Level and Health-Seeking Behavior for Snakebite Incidents in the Panti District of Jember

According to Alcoba (2020), knowledge level is related to healthcare-seeking behavior because one's level of knowledge can influence their decision in choosing a healthcare facility (14). The results of Table 5.8 indicate that there is a relationship between the knowledge level and healthcare-seeking behavior for snakebite incidents in the Panti District of Jember. The majority of individuals, 73 people (73%), who have good knowledge levels tend to choose medical healthcare services, with 67 individuals (67%) opting for this option. Fauzian et al., (2016) stated that the knowledge level is one of the stimuli in shaping behavior. Alcoba et al., (2020) also stated that the knowledge level can influence a person's decision in choosing a treatment facility. Gustina Erni's research in 2017 explained that the higher a person's knowledge level, the greater the likelihood of actions related to that knowledge.

The research also found that 11 individuals (11%) tend to choose traditional medicine when they have a moderate knowledge level. This is consistent with Alcoba et al.'s research, which suggests that individuals with limited knowledge about appropriate healthcare may tend to choose traditional medicine over medical healthcare facilities (14). The questionnaire results showed that some individuals who chose traditional medicine still engaged in practices such as cutting the wound, sucking out venom/snakebite toxins, applying alcohol, and using tourniquets or tight bandages on wounds. These practices are not recommended by WHO (2019) guidelines, as they can be harmful and dangerous to both the victim and the caregiver.

The researcher concludes that farmers in the Panti District of Jember tend to have good knowledge and, consequently, opt for medical healthcare services, as individuals with a higher level of health knowledge are more likely to seek assistance from healthcare institutions, as suggested by Huang et al. (2019). However, the choice of traditional medicine methods such as wound cutting, sucking out venom, and using tourniquets is discouraged by WHO due to the potential harm they can cause to both victims and caregivers (WHO, 2019).

The Relationship Between Perception of Illness and Health-Seeking Behavior for Snakebite Incidents

In the research conducted by Begashaw et al. (2016), it is mentioned that the severity of the disease or condition experienced is one of the primary factors influencing an individual's perception of pain and their healthcare-seeking behavior for treatment. The results presented in Table 5.9 demonstrate a relationship between pain perception and healthcare-seeking behavior for snakebite incidents. The majority of respondents, 89 individuals (89%), had a positive perception of pain, indicating that most of them felt the need for treatment, and as a result, 78 individuals (78%) tended to choose medical healthcare services. According to Zamanzadeh et al. (2017), an individual's perception of pain can lead them to seek healthcare, as experiencing pain can prompt individuals to seek treatment. If someone has a positive perception, they are more likely to accept and adapt to the situation, whereas those with a negative perception may struggle to accept and adapt to their pain when making decisions (Amisim et al., 2020). However, this finding contrasts with Kakkar et al. (2017), who reported no clear link between disease perception and treatment-seeking behavior in Japanese Encephalitis cases in North India. Their study suggests that perception alone may not drive health behavior, as other factors like access to care, cultural beliefs, and health infrastructure play a critical role (Kakkar et al., 2017).

The research also found that 11 individuals (11%) had a negative perception of pain, and they tended to choose traditional medicine, with 6 individuals (6%) opting for this approach. This finding aligns with Zamanzadeh et al.'s (2017) research, which suggests that perception is related to actions taken. If someone has a positive perception, they are more likely to accept and adapt to the situation, whereas those with a negative perception may struggle to accept and adapt to their pain when making decisions (18). Individuals with a negative perception chose traditional medicine because they had lower levels of knowledge and tended to have a negative attitude, which in turn affected their healthcare-seeking behavior. This is consistent with the findings of Bukan et al. (2020), which indicate that an individual's attitude is related to their knowledge. When someone has good knowledge, they are more likely to have a positive attitude in dealing with their problems.

Perception of illness is an individual's subjective feeling of health or illness, and it can influence whether a person seeks treatment when they are unwell (20). In the case of farmers in the Panti District of Jember, the majority had a positive perception of pain, meaning they felt compelled to seek treatment when they were unwell and tended to choose medical healthcare services. An individual's choice to seek medical healthcare services can be linked to their level of knowledge, their attitude towards seeking care, and the accessibility of healthcare services, all of which had positive outcomes. Therefore, individuals with a positive perception of pain were more likely to choose medical healthcare services, while those with a negative perception tended to opt for traditional medicine (Bukan et al., 2020)

The Relationship Between Attitude and Health-Seeking Behavior for Snakebite Incidents

Attitude refers to a person's closed reaction to a stimulus. Therefore, when a problem arises, such as a snakebite, farmers will have perceptions that are related to their attitudes toward taking action (Gabriella & Sugiarto, 2020). The results presented in Table 5.10 indicate a relationship between attitude and healthcare-seeking behavior for snakebite incidents.

It was found that the majority of individuals had a moderate attitude towards seeking healthcare, with 54 people (54%) tending to choose medical healthcare services, while 41 individuals (41%) opted for this option. In addition to knowledge, attitude is also related to a person's behavior in seeking healthcare because attitude can influence a person's response to a problem or illness (Saputra et al., 2020). These findings are consistent with those of Shah et al. (2023), who reported that most tribal women in rural Maharashtra preferred government medical facilities (71.58%) for snakebite treatment, followed by traditional healers (20.14%) and private healthcare providers (8.27%).

The research also found that some individuals with a certain attitude chose traditional medicine, totaling 13 individuals (13%). This may be influenced by the fact that these respondents had lower levels of knowledge. This aligns with the findings of Bukan et al. (2020), which suggest that an individual's attitude is related to their knowledge. When someone has good knowledge, they are more likely to have a positive attitude in dealing with their problems, especially when it comes to managing illnesses. Conversely, if someone has limited knowledge, it may be associated with a negative attitude toward the actions they take.

In conclusion, the majority of individuals had a moderate attitude towards seeking healthcare, and most of them chose medical healthcare services. Therefore, it can be inferred that an individual's attitude is related to their healthcare-seeking behavior, as it is associated with their level of knowledge. If someone has good knowledge, they are more likely to have a positive attitude in dealing with their problems, especially when it comes to managing illnesses, thereby avoiding delays in treatment (Saputra et al., 2020). On the other hand, individuals with a certain attitude who chose traditional medicine may have lower levels of knowledge, leading to a negative attitude toward seeking healthcare and choosing less optimal facilities for treatment (Bukan et al., 2020).

The Relationship Between Income Level and Health-Seeking Behavior for Snakebite Incidents

According to the research by Tampi et al. (2016), income level is associated with differences in people's perceptions when choosing healthcare services, as well as their needs, desires, and lifestyles. The results presented in Table 5.11 demonstrate a relationship between income level and healthcare-seeking behavior for snakebite incidents. It was found that the majority of respondents had a low-income level, with 38 individuals (38%) tending to choose medical healthcare services, totaling 25 individuals (25%). Ediriweera et al. (2017) state that a person's income level is strongly related to healthcare-seeking behavior because income level can influence an individual's choice when seeking healthcare (20). Most farmers in this study had low incomes, with 38 individuals in this category. Out of those, 25 individuals opted for medical healthcare services, while 13 chose traditional medicine.

It can be concluded that the majority of farmers with low incomes tend to choose medical healthcare services. This choice can be influenced by various factors, including their level of knowledge, positive perception of illness, positive attitude towards seeking healthcare, easy access to healthcare services, and a relatively high level of education (most had completed high school). Additionally, the availability of healthcare assistance programs like JAMKESMAS, which provides healthcare services to low-income and economically disadvantaged individuals, may also influence their choice of medical healthcare services (Hamdani, 2013).

The Relationship Between Accessibility to Healthcare Services and Health-Seeking Behavior for Snakebite Incidents

The distance from one's residence or the incident location to healthcare facilities is a significant determinant of healthcare-seeking behavior (20). In the study, it was found that farmers had an average distance of less than 1 km from their homes to healthcare facilities, and the average travel time was less than 15 minutes. Most respondents reported good road conditions and had motorcycles to access healthcare services.

Additionally, the research identified seven respondents who preferred traditional medicine. This preference may not only be influenced by their moderate level of knowledge (7 individuals), negative perception of illness (5 out of 7), and poor attitude toward seeking formal healthcare (4 out of 7), but also by cultural beliefs. In many communities, traditional treatments are often rooted in spiritual or ancestral practices are remain deeply ingrained and perceived as more trustworthy or accessible, especially in cases involving animal bites or perceived supernatural causes. These cultural factors, combined with individual psychosocial attributes, may explain why some individuals opt for traditional remedies despite having easy access to modern medical services (Begashaw et al., 2016; Ediriweera et al., 2017; Alcoba et al., 2020).

Easy accessibility is influenced by the fact that most farmers in the study had proximity to healthcare facilities, short travel times, and motorcycles for transportation, making it easier to access nearby medical healthcare services. On the other hand, individuals who chose traditional medicine may have been influenced by their level of knowledge, perception of illness, and a negative attitude, which in turn led them to select less optimal treatment facilities (Begashaw et al., 2016); Ediriweera et al.,2017; Alcoba et al., 2020).

Conclusion

This research was supported by an internal grant from the Research and Community Service Institute (LP2M), University of Jember, which helped cover essential activities such as data collection, fieldwork, and community training sessions. Appreciation is also extended to the farmers and village leaders who participated and provided valuable input and cooperation throughout the study

Conflicting Interest

All authors declare no conflict of interest.

References

Adiwinata, R., Nelwan, E. J., & Nelwan, E. J. (2021). Snakebite in Indonesia. *Acta Medica Indonesiana: The Indonesian Journal of Internal Medicine*, *53*(4), 358–365. https://www.inaactamedica.org/archives/2021/358-acta-medica-indonesiana.pdf

Alcoba, G., M. Chabloz, J. Eyong, F. Wanda, C. Ochoa, E. Comte, A. Nkwescheu, dan F. Chappuis. (2020). Snakebite epidemiology and health-seeking behavior in Akonolinga Health District, Cameroon: Cross-sectional study. *PLOS Neglected Tropical Diseases*, *14*(6), e0008334. https://doi.org/10.1371/journal.pntd.0008334

Amisim, A., A. W. S. Kusen, dan W. E. Mamosey. (2020). Persepsi Sakit dan Sistem Pengobatan Tradisional dan Modern Pada Orang Amungme. Jurnal Holistik Vol 13 (1) ISSN : 1979-0481

Begashaw, B., F. Tessema, dan H. A. Gesesew. (2016). Health care seeking behavior in southwest ethiopia. *PLoS ONE*. 11(9):1–13. https://doi.org/10.1371/journal.pone.0161014

Bhargava, S., Kumari, K., Sarin, R. K., & Singh, R. (2020). First-hand knowledge about snakes and snake- bite management: an urgent need. *Nagoya Journal of Medical Science, 82(4), 763–774.* https://doi.org/10.18999/nagjms.82.4.763

Bukan, M., R. Limbu, dan E. Ndoen. (2020). Gambaran Perilaku Pencarian pengobatan Penyakit Tuberkulosis (TB) Pada Masyarakat di Wilayah Kerja Puskesmas Uitao Kecamatan Semau Kabupaten Kupang. Kupang. Media Kesehatan Masyarakat VOL 2 (3) 8-16 ISSN 2722-0265

Chen, C., L. Gui, T. Kan, S. Li, dan C. Qiu. (2017). A survey of snakebite knowledge among field forces in China. *International Journal of Environmental Research and Public Health*, *14*(15), 1–8. https://doi.org/10.3390/ijerph141215

Chippaux, J. P. (2017). Snakebite envenomation turns again into a neglected tropical disease! In *Journal of Venomous Animals and Toxins Including Tropical Diseases (Vol. 23, Issue 1). BioMed Central Ltd*. https://doi.org/10.1186/s40409-017-0127-6

Das, S., Banerjee, S., Naskar, S., & Das, D. K. (2021). Care-seeking behaviour of suspected snakebite cases admitted in a medical college of West Bengal: A pathway analysis. Medical Journal Armed Forces India, 77(1), 58–62. https://doi.org/10.1016/j.mjafi.2019.11.003

Ediriweera, D. S., A. Kasturiratne, A. Pathmeswaran, N. K. Gunawardena, S. F. Jayamanne, D. G. Lalloo, dan H. J. de Silva. (2017). Health seeking behavior following snakebites in sri lanka: results of an island wide community based survey. *PLoS Neglected Tropical Diseases*. 11(11):1–11. https://doi.org/10.1371/journal.pntd.0006073

Fauzian, R. A., F. L. Rahmi, & T. Nugroho. (2016). Hubungan Tingkat Pengetahuan Dengan Perilaku Memeriksakan Diri Ke Pelayanan Kesehatan : Penelitian Pada Pasien Glaukoma di Rumah Sakit Dr. Kariadi. Semarang. Juenal Kedokteran Diponegoro Vol 5 (4) Oktober 2016.

Gabriella, D. A., dan A. Sugiarto. (2020). Kesadaran dan Perilaku Ramah Lingkungan Mahasiswa di Kampus. Salatiga. Jurnal Ilmu Sosial dan Humaniora Vol 9 92) ISSN : 2549-6662.Gustina, E. (2017). Hubungan Pengetahuan Dengan Perilaku Pencarian Pengobatan Gangguan Menstruasi Pada Remaja Putri. Yogyakarta. Prosiding Seminar Nasional ISBN : 9878-979-3812- 41-0 26 Januari 2017.

Hamdani, P., D. (2013). Implementasi Program Pelayanan Jaminan Kesehatan Masyarakat Berdasarkan Peraturan Kementrian Kesehatan Republik Indonesia Nomor 903/MENKES/PER/V/2011. Nganjuk. Fakultas Hukum. Universitas Brawijaya.

Haristiani, R., Yunanto, R. A., Setioputro, B., Rokhani, Muvidah, N. R. A., & Ni'mah, A. F. (2024). Penguatan keterampilan gabungan kelompok tani (Gapoktan) dalam penanganan korban gigitan ular di wilayah pertanian Kecamatan Panti, Kabupaten Jember. *Jurnal Abdi Insani, 11*(1), 567–577. https://doi.org/10.29303/abdinsani.v11i1.1258

Huang, M., Zhang, H., Gu, Y., Wei, J., Gu, S., Zhen, X., Hu, X., Sun, X, dan Dong, H. (2019). Outpatient health-seeking behaviour of residents in Zhejiang and Qinghai Province, China. *BMC Public Health*, *19*, 967. https://doi.org/10.1186/s12889-019-7317-6

Ibrahim, R. (2020). Assessment of Health - Seeking Behaviour among Snakebite Victims in a Rural Community of Kaltungo Local Government Area, Gombe State, Nigeria. *Texila International Journal Of Public Health, 8(1), 61–67.* https://doi.org/10.21522/tijph.2013.08.01.art007

Kakkar, M., Sharma, N., & Chaturvedi, S. (2017). Perceptions, practices and health seeking behaviour constrain JE/AES interventions in high endemic district of North India. *BMC Public Health, 17*, 645. https://doi.org/10.1186/s12889-017-4654-4

Kurniasih, D., W. Sudarta, dan N. Parining. (2017). Hubungan Antra Karateristik Petani dengan Motivasinya dalam Membudidayakan Tanaman Tebu (Kasus Kelompok Tani Dewi Ratih 1, Desa Maospati, Kecamatan Maospati, Magetan. Denpasar. *Jurnal Agribisnis dan Agrowisata Vol 6 (4).*

Mukti, G. W., Y. Deliana dan R. A. B. Kusumo. (2021). *Aspek pendorong petani muda untuk berkolaborasi dalam kelompok tani (Kasus pada petani muda hortikultura di Kecamatan Lembang, Kabupaten Bandung Barat)*. *Mimbar Agribisnis: Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis***,** *7*(1), 186–199. https://doi.org/10.25157/ma.v7i1.4478

Munawwaroh, F. (2019). Pengetahuan Tentang Pencegahan dan Penanganan Gigitan Ular pada Petani di Kecamatan Panti Kabupaten Jember. Skripsi. Jember : Universitas Jember.

Rahmatulloh, F., C. Susilo dan M. Zaini. (2019). Pengaruh Pendidikan Kesehatan Terhadap Penanganan Awal Gigitan Ular Berbisa Kepada Tenaga Kesehatan di Puskesmas Panti Kabupaten Jember. Jember. Universitas Muhammadiyah Jember.

Rhondi, M., dan A. H. Adi. (2018). Pengaruh Pola Pemilikan Lahan terhadap Produksi, Alokasi Tenaga Kerja, dan Efisiensi Usahatani Padi. Jember. *Journal of Agribusiness and Rural Development Research Vol*. 4(2) Juli-Desember 2018.

Saputra, M. R., Rakhmawati, W., Hendrawati, S., & Adistie, F. (2020). KNOWLEDGE, ATTITUDE, AND HEALTHCARE-SEEKING BEHAVIOR AMONG FAMILIES OF CHILDREN WITH TUBERCULOSIS. *Belitung Nursing Journal*, *6*(4), 127–135. https://doi.org/10.33546/bnj.1156Susilowati, S. H. (2016). Fenomena Penuaan Petani dan Berkurangnya Tenaga Kerja Muda Serta Implikasinya Bagi Kebijakan

Pembangunan Pertanian. Bogor. *Forum Peneltian Agro Ekonomi Vol* 34 (1) Juli 2016 : 35-55. https://media.neliti.com/media/publications/135268-ID-fenomena-penuaan-petani-dan-berkurangkan.pdf

Shah, A. K., Sapkal, A. B., & Deshpande, S. (2023). Healthcare-seeking behavior and awareness regarding snakebites and its first-aid management among tribal women in rural Maharashtra. *CHRISMED Journal of Health and Research, 10*(2), 142–147. https://doi.org/10.4103/cjhr.cjhr_143_21.

Sulistyaningrum, D. R. (2016). Penetahuan Petani Tentang Pertolongan Pertama Pada Snakebite. Disertasi. Ponorogo: Universitas Muhammadiyah Ponorogo. https://eprints.umpo.ac.id/3850/

Tampi, J., A. A. Rumayar, dan A. A. . Tucunan. (2016). Hubungan antara pendidikan, pendapatan dan pekerjaan dengan pemanfaatan pelayanan kesehatan di rumah sakit umum daerah manembo- nembo bitung 2015. *Kesmas: Jurnal Kesehatan Masyarakat 5(1).* https://ejournal.unsrat.ac.id/index.php/kesmas/article/view/12679

World Health Organization. (2019). Snakebite Envenoming. A Strategy for Prevention and Control.https://apps.who.int/iris/bitstream/handle/10665/324838/9789241515641%E2%80%91eng.pdf

Yunanto, R., & Sulistyorini, L. (2021). Snakebite Cases in Agricultural Area of Jember: A Descriptive Study of Snakebite Victims at Two Public Hospitals of Jember. Jurnal Kesehatan Dr. Soebandi, 9(2), 106–114. https://doi.org/10.36858/jkds.v9i2.286

Yunanto, Rismawan & Wantiyah, & Permatasari, Nigitha & Siswoyo, & Setioputro, Baskoro. (2022). Self-Awareness Of Farmers In Snakebite Management In Panti District, Jember Regency. Jurnal Kesehatan dr. Soebandi. 10. 53-61. 10.36858/jkds.v10i1.340.

Yuniasih, D., Tejosukmono, A., & Heriyanto, J. (2020). Snakebite as a Neglected Tropical Diseases in Indonesia: A Review. *International Journal of Scientific & Technology Research, 9*(3), 6180–XXXX. Diakses dari www.ijstr.org

Zamanzadeh, V., F. Ahmadi., M. Fooladi., M. Behshid, dan A. Irajpour. 2017. The Health Seeking Behaviors and Perceptions of Iranian Patient With Osteoarthritis about *pain management: A qualitative study*. *Journal of Caring Sciences, 6*(1), 81–93. https://doi.org/10.15171/jcs.2017.009.