Jurnal Kesehatan dr. Soebandi
ISSN : 2302-7932 (Print)
ISSN : 2527-7529 (OnLine)

Self-Awareness Of Farmers In Snakebite Management In Panti District, Jember Regency

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ABSTRACT

Introduction: Snakebite cases are one of the health problems that can threaten human life. The farmers had a high risk of experiencing snakebites due to the farming activity in the area where snakes can live and hide. Farmers must have good self-awareness to prevent being bitten by poisonous snakes. Farmers' self-awareness measurements against poisonous snake bites are still not identified yet. **Objective:** To describe the self-awareness of farmers in snakebite management. **Methods:** This was a quantitative descriptive research design with a survey approach. The sample in this study was 100 farmers in Panti, Jember Regency, with a cluster sampling technique. The data was collected using a self-awareness questionnaire. **Results:** Most farmers were male with a mean age of 41,07 (SD = 11,43). Length of work farmers with a median length of work of 12.00 (Min-Max 1-50), the majority of farmers' education is high school (38%). Most respondents stated that some snakes in their area were non-venomous (71%). They performed first aid by keeping the bitten part of the body from moving (79%), using a solid bond at the top of the bite wound (81%), and not giving drinks containing alcohol to relieve pain (79%). The preventive action was controlling rodents (rats) (92%), and cleaning the grass around the house (94%) is the best way to prevent snakebite. The farmers also preferred modern treatment methods (Government Hospital or Public Health Center) for snakebite treatment (76%). **Conclusion:** The farmers in Panti have good self-awareness due to snakebite management. Most farmers know about the venomous and non-venomous snakes in their area, give proper first aid treatment for snakebite victims, use prevention methods to reduce the snakebite risk, choose the right medication and treatment for the victim in public health services or general hospital.

ABSTRAK

Latar belakang: *Kasus gigitan ular merupakan salah satu masalah kesehatan yang dapat mengancam kehidupan manusia. Para petani memiliki risiko tinggi untuk mengalami gigitan ular karena kegiatan bertani di area tempat ular tinggal dan bersembunyi. Petani harus memiliki kesadaran diri yang baik agar tidak digigit ular berbisa. Pengukuran kesadaran diri petani terhadap gigitan ular berbisa masih belum teridentifikasi.* ***Tujuan:*** *Untuk mengetahui kesadaran diri petani dalam melakukan manajemen gigitan ular.* ***Metode:*** *Penelitian ini merupakan penelitian deskriptif kuantitatif dengan pendekatan survey. Sampel dalam penelitian ini adalah 100 petani di Panti Kabupaten Jember dengan teknik cluster sampling. Pengumpulan data dilakukan dengan menggunakan kuesioner kesadaran diri.* ***Hasil:*** *Sebagian besar petani berjenis kelamin laki-laki dengan rerata usia 41,07 (SD = 11,43). Lama kerja petani 12 tahun (Min-Max 1-50), pendidikan petani mayoritas adalah SMA (38%). Sebagian besar responden menyatakan bahwa beberapa ular di wilayah mereka adalah ular tidak berbisa (71%). Mereka melakukan pertolongan pertama dengan imobilisasi bagian tubuh yang digigit (79%), menggunakan ikatan yang kuat di bagian atas luka gigitan (81%), tidak memberikan minuman yang mengandung alkohol untuk menghilangkan rasa sakit (79%). Tindakan pencegahan dan pengendalian yang dilakukan adalah mengontrol hewan pengerat (tikus) (92%) dan membersihkan rumput di sekitar rumah (94%) adalah cara terbaik untuk mencegah gigitan ular. Para petani juga lebih memilih metode pengobatan modern (Rumah Sakit Pemerintah atau Puskesmas) untuk pengobatan gigitan ular (76%).* ***Kesimpulan:*** *Petani di Panti memiliki kesadaran diri yang baik dalam manajemen gigitan ular. Sebagian besar petani memiliki pengetahuan tentang ular berbisa dan tidak berbisa di daerah mereka, memberikan pengobatan pertolongan pertama yang tepat untuk korban gigitan ular, menggunakan metode pencegahan untuk mengurangi risiko gigitan ular, memilih pengobatan dan pengobatan yang tepat untuk korban di Puskesmas atau rumah sakit umum..*

Submission : 04-11-2021

Revised : 22-03-2022

Accepted : 11-04-2022

Kata Kunci *: Kesadaran Diri, Gigitan Ular, Penanganan awal gigitan ular*

Keywords **:** Self-awareness, Snakebite, Snakebite management of farmers

Doi : 10.36858/jkds.v10i1.340

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Introduction:

Snakebite by a poisonous snake can threaten human life because of its high mortality rates. It is also reported that the mortality rate of snakebite victims in tropical countries was high (Musah *et al.*, 2019). Snakebite is a neglected tropical disease because the victim in rural areas tends to use the traditional instead of going to health services (Warrell, 2012). According to previous research in Jember general hospital, the victim of snakebite is a mostly male farmer who was bitten during farming activity (Yunanto & Sulistyorini, 2021).

Farmers must have good self-awareness to prevent being bitten by poisonous snakes. Self-awareness is the ability to understand oneself and pay attention to thoughts, behavior, and the impact that can be caused (Rogers, 1974). Self-awareness can be developed or transformed into knowledge, actions or practices, and attitudes. There are several factors that affect self-awareness. Those factors are the perception of the risk/danger, knowledge, and preventive action. Those factors can contribute to the self-awareness of farmers in doing snakebite management to decrease morbidity and mortality rates (Mahmood et al., 2019).

Self-awareness is essential because good self-awareness will minimize the incidence of snakebite in farmers. Previous research explaining self-awareness in rural areas by Vasantro et al. (2014) found that adults in rural areas are aware of the action to help after snakebite. Good self-awareness can increase people's response in rural areas to provide first aid immediately, but good self-awareness is not enough. From the study, it was explained that even though the response was fast, only a few victims could be helped correctly. Good self-awareness should be followed by correct knowledge about handling snake bites

As an agricultural area with a wide area, Panti has many people who work as farmers. Panti also has a high risk of snakebite by a venomous or non-venomous snake. Based on our document study in Puskesmas Panti, an average of 10 snakebite cases occur every year in Pukesmas Panti. It is also reported that the type of snakes responsible for the snakebite cases were green snakes, ground snakes, and weling snakes. Based on those data, it can be concluded that farmers in Panti, Jember have a potential risk of getting a snakebite by a poisonous snake. Although the risk of snakebite is relatively high in the Panti Jember, research on farmers' self-awareness of the risk of snakebite in Panti has never been carried out. Hence, researchers are interested in describing the self-awareness of farmers' self-awareness of snakebite management. The objective of this study is to describe the self-awareness of farmers in snakebite management.

Methods:

The research design in this study was a quantitative descriptive research design with a survey approach. The sample in this study was 100 farmers in 4 villages in the Panti Sub-district of Jember. We went to Panti, Suci, Serut, and Glagahwero village for the place of this study. The selection of these four villages was considered to represent the entire population of farmers. We used the probability sampling technique with cluster sampling for selecting the respondents.

The inclusion criteria for this study were: (1) all farmers, both those who had a history of snake bites or not; (2) all farmers who worked directly on the land, either their own or someone else's land; (3) lived in the Panti sub-district, Jember; (4) Were willing to be respondents. The exclusion criteria for this study were: (1) farmers who at the time of the study were not in Panti; (2) farmers who had other jobs besides farmers and had a health practitioner. The data was obtained with a self-awareness of snakebite questionnaire (Silvia et al., 2015).

Characteristics of respondents were obtained using a questionnaire on respondent characteristics which included name, gender, ethnicity, education, length of work as a farmer, and there is a family member as a health worker. The self-awareness variable

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was measured using a self-awareness questionnaire. The Validity of this questionnaire was measured using the CVI (Content Validity Index) test with a result of 0.87.

This study was approved by the ethical committee review board for research No: 94/UN25.1.14/KEPK/2021. Ethical and administrative approval from the ethics commission of health research of the Faculty of Nursing, University of Jember.

Results:

Table 1. Characteristics of respondent characteristics

Respondent Characteristics	Amount	Percentage (%)
Gender		
Male	85	85
Female	15	15
Ethnic		
Java	87	87
Madura	13	13
Education		
Not Attending School	12	12
Elementary School	23	23
Junior High School	14	14
Senior High School	38	38
Bachelor Degree	12	12
Master Degree	1	1
There is a family member as a health worker		
Yes	11	11
No	89	89

No	Respondent Characteristics	Mean	SD	Median	Min-Max
1.	Age (Old)	41,07	11,43		
2.	Length of Work (Year)			12,00	1-50

Tabel 1. explained the characteristics of respondent characteristics. Most snakebite victims were male farmers with a mean age of 41,07 (SD = 11,43). Length of work farmers with a median length of work of 12.00 (Min-Max 1-50).

Table 2. Venomous Snake in Jember

No	Question	Yes	No
1.	Most snakes in Jember are Non-venomous	71 (71%)	29 (29%)

Table 2. describe the venomous snake in Jember. Most respondents believed that most snakes in Jember were non-venomous (71%).

Table 3. First Aid Treatment

No	Question	Yes	No
1.	Bitten part of the body should be kept immobilized	79 (79%)	21 (21%)
2.	The bitten site should not be excised	74 (74%)	26 (26%)
3.	Aspirin should not be given for pain relief	50 (50%)	50 (50%)
4.	Beverages containing alcohol should not be given to the patient for pain relief	79 (79%)	21 (21%)
5.	Application of tight band (tourniquet) proximal to the site of the bite	81 (81%)	19 (19%)

Table 3. describe the First Aid treatment of snakebite. The farmers mostly agree that a bitten body part was kept from moving (79%), using a solid bond at the top of the bite wound (81%), and **not** giving drinks containing alcohol to relieve pain (79%). Most of the respondents also believed applying a tight band (tourniquet) proximal to the bite site was still helpful in managing snakebite victims (81%).

Table 4. Medication for poisonous snake

No	Question	Yes	No
1.	Capturing the offending snake for identification is not essential in treating the patient	80 (80%)	20 (20%)
2.	Snakebites can be successfully treated in Panti Jember	82 (82%)	18 (18%)
3.	Antivenom is available only in some hospitals in Panti Jember	81 (81%)	19 (19%)

Table 4. describe the medication for snakebite victims. Most respondents think that capturing the offending snake for identification is not essential in treating the patient (80%). They also believed that

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snakebite victims in Panti could be treated because of the availability of antivenom in the public health center in Panti.

Table 5. Preventive Action

No	Question	Yes	No
1	Avoiding storing paddy harvest inside houses	69 (69%)	31 (31%)
2.	Controlling rodents inside the houses	92 (92%)	8 (8%)
3.	Storing firewood outside the houses	78 (78%)	22 (22%)
4.	Clearing an area devoid of leaf litter and grass around the houses	94 (94%)	6 (6%)
5.	Tapping the ground with a stick while walking outside at dusk	63 (63%)	37 (37%)
6.	Caring a torch or a flame while walking outside at dusk	83 (83%)	17 (17%)
7.	Wearing protective shoes while walking outside at dusk and while farming, activities	89 (89%)	11 (11%)

Tabel 5. explained the preventive action for preventing snakebite victims. Most respondents believed that avoiding keeping crops indoors (69%) and controlling rodents (rats) (92%) is the best way to prevent snakebite. Cleaning the grass around the house (94%), storing wood outside the home (78%), carrying a torch when leaving the house (83%), wearing protective shoes when going out of the house (89%), and carrying a stick and tapping the ground with a stick when walking out of the house in the dark (63%) were also the best preventive action for snakebite accident.

Table 6. Preferred Treatment Method

No	Question	Yes	No
1	Native/Ayurveda treatment	51 (51%)	49 (49%)
2.	Western treatment from a government hospital	76 (76%)	24 (24%)
3.	No special preference for one treatment method	61 (61%)	39 (39%)

Tabel 6. Described preferred treatment method. Most of respondents choose modern treatment methods (Government Hospital or Public Health Center) (76%).

Discussion:

The average age of the respondents is 41 years old (SD=11,43). Previous research explains the same result. Rianty & Sudiadnyana (2019) explained that farmers' age ranges are 36-45 years (productive age). Cepriadi & Yulida (2012) also stated that most farmers were in productive age. The characteristics of this age are that the farmers tend to seek more income actively and have strong energy to do several activities in farming. The age of farmers also takes an effect on farming activities, thinking ability process, and physical condition (Santoso et al., 2020). Productive age directly affects the self-awareness of someone because, in this age, someone tends to use a critical thinking process that can lead them to increase their alertness to something dangerous around them (Kusyairi et al., 2019).

The respondents' average length of work as a farmer is 12 years (Min-Max = 1 – 50). According to the previous research, experience is the key to self-awareness of someone in their working environment. The longer time someone works as a farmer, the more experienced they are in dealing with problems in the agricultural sector, such as proper risk control due to the long learning process. Experience or length of work is divided into three categories, (1) less experienced (<10 years), (2) moderately experienced (10-20 years), (3) experienced (>20 years) (Manyamsari & Mujiburrahmad, 2014). Research conducted by Kosasih (2020) obtained data that work experience is one of the factors that can create more effective and efficient performance in job performance.

The results of the study of the respondents showed that the majority of respondents had a

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second level of education at Senior High School (38%). The results of this study are contrary to the results of previous studies provided by Sa'diyah (2020), which states that the last education of the majority of farmers is Elementary School. One survey also stated that 57,600 people of the total number of farmers are undergraduate (Post, 2019). According to research by Tarigan et al. (2018), formal education is one of the efforts that a person can make to change a person's behavior better in a planned way and process. The results of this study are also similar to the results of research conducted by Pajooh & Aziz (2014) that the higher the education, the higher the awareness or vigilance of the events around them, especially during their activities as farmers.

Venomous Snake, First Aid, Medication, Preventive Action, Preferred Treatment Method Indicator

The results showed that farmers in Panti, Jember believed that most snakes in their area were non-venomous snakes, although they still did not know enough about all types of snake species. According to the results of research by Budiada et al (2017), the diversity of snake species in Indonesia was recorded in as many as 109 snake species on the island of Java. There are 76 venomous snakes in Java (Muthmainnah, 2020). Meanwhile, according to Rifaie et al. (2017), the number of venomous snakes in Indonesia is 77, while the total number of snakes is 370. The number of non-venomous snakes is larger than venomous snakes from those data. The farmer in Panti showed the same result as previous research. They already knew that most of the snakes around them were non-venomous snakes.

The majority of farmers in Panti can do the first aid treatment for snake bites correctly based on the guideline by WHO (2016). It can be seen in the results of the questionnaire answers, the farmers will keep the body part that is bitten from moving, the bitten area should not be cut to emit the venom, and also the alcoholic beverages should not be given to the victim to relieve pain. The results of this study are similar to research conducted by Subaedi et al. (2018) that; the majority of respondents stated that if the bitten body must be immobilized, it is not recommended to cut the bite wound and give alcoholic beverages with the aim of relieving pain. This result is also supported by the guideline of WHO (2016) that states if someone was bitten by a venomous snake, the first aid that should be done is calm the victim, ensure the environment is safe, reduce movement, give recovery position, do not give any fluids because there is a risk of choking so that it triggers a heartbeat, and bring the victim to the nearest hospital immediately,.

The majority of farmers in the Panti stated that catching snakes was not necessary in handling snakebite cases. Following the study results, more respondents said that catching a biting snake was not the primary goal of identifying snakebite treatment. The results of this study follow WHO (2016), which state that when performing first aid, it is enough to just remember the color and shape of the snake that bites to be reported to health workers because if you force to kill the snake, it is very risky.

According to the opinion of research conducted by Afni & Sani (2020), when providing first aid and treatment to snakebite victims, they do not have to catch snakes or kill snakes that bite but must be able to remember the characteristics of snakes, including color, shape, size, and others so that it can distinguish between venomous and non-venomous snakes. If at the time of the incident, the rescuer brings a communication device such as a cellphone, it can be used to take photos of the snake biting Afni & Sani (2020). Antivenom or antivenom is only available in some health services. This research is similar to the results of the study conducted by Munawwaroh (2020) regarding the place of supplying SABU (Anti-Venom Serum) for the majority of the Panti community, stating that SABU can be obtained at the Public Health Center.

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Another phenomenon from the data obtained is that many farmers still do not carry sticks and tap the ground using a stick when walking out of the house in the dark (63%). Several actions are included in the indicators of preventive measures, and the majority of the people in Panti have taken preventive steps properly and correctly according to guidelines (WHO 2016). The results showed that most farmers had used PPE (Personal Protective Equipment), especially when doing activities outside the home or while farming. To minimize the risk of accidents at work, farmers use the recommended PPE, such as headgear, work clothes, gloves, nose and mouth protective equipment, and work shoes (Sidqi, 2020). There are seven kinds of personal protective equipment for farmers, including hats, masks, glasses, gloves, trousers, clothes, and boots because boots, trousers, and gloves can prevent snakebites in children (Minaka et al., 2016).

More farmers choose modern medicine, although several farmers choose traditional medicine, and some combine modern and traditional medicine. There are several sources of world medicine, one of which is health services carried out by medical personnel (Pertiwi & Hamidah, 2018). Therefore, from the choice of treatment methods that are often used, it can be concluded that the majority of the community, especially farmers in Panti, are aware of good and correct treatment, excellent treatment carried out in hospitals or health centers. Similar to the research conducted by Niasari & Latief (2016) that medical treatment is usually chosen by victims who assume or know that the proper treatment for snakebite victims is provided by health services like public health centers or general hospitals.

Acknowledgment:

The authors would like to thank the Department of Research and Community Engagement of the University of Jember for funding this research (Hibah KeRis). We would also like to thank the group farmers (GAPOKTAN) in Panti Sub-district of Jember who were willing to participate as respondents in this study.

Conslusion:

The self-awareness of farmers in Panti is included in the good category. This study showed that most farmers know about the venomous and non-venomous snakes in their area, give proper first aid treatment for snakebite victims, use prevention methods to reduce the snakebite risk, and choose the right medication and treatment for the victim in public health services or general hospitals. It is hoped that further research will conduct further or deeper research in identifying self-awareness following the theory of awareness or self-awareness and explore what factors influence farmers' self-awareness in snakebite management.

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