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A KAP STUDY ON SNAKE BITES AMONG THE AGRICULTURAL WORKERS OF WEST GODAVARI DISTRICT, AP STATE

Community Medicine

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ABSTRACT

Introduction: WHO had listed snake bite envenoming as a highest priority neglected tropical disease in June 2017.
Objective: To assess the knowledge, attitude and practices of the agricultural workers regarding the do's and do not's of snake bites and envenoming.
Materials And Methods: A Community based Cross-sectional study was conducted using multi stage sampling method from (July 2019 to September 2019), involving all the agricultural workers of Eluru revenue division of West Godavari District, who fit the inclusion criteria and gave consent. Accounting for a sample size (n) of 1400.
Results: About 12pc had history of snake bite. Around 98pc knew that all snake bites were not poisonous. About 68pc had adequate knowledge and 44pc had proper practices. About 8pc still preferred traditional methods of treatment.
Conclusion: People with adequate knowledge were more than that of adequate practice.

KEYWORDS

Agricultural workers, KAP, Multi stage sampling, Snake bites.

INTRODUCTION:

Snake bite is a public health issue that is neglected in many tropical and subtropical countries.[1] According to "WHO fact sheet of snake bite envenoming" 2019, an estimate of population exposed to snake bites each year were 5.4 million and that of envenoming were 2.7 million globally. [1, 2, 3] In INDIA alone populations of up to 2.8 million were bitten by snakes, 46, 900 people died from snake bites every year.[2] WHO had listed snake bite envenoming as a highest priority neglected tropical disease in June 2017.[2,3] Agricultural workers are at increased risk of snake bites and envenoming due to their work place environment.

OBJECTIVE:

To assess the knowledge, attitude and practices followed by the agricultural workers regarding the do's and do not's of snake bites and envenoming.

MATERIALS AND METHODS:

Study Design: Community based Cross-sectional study.

Study Area: Eluru division of West Godavari District, Andhra Pradesh State.

Selection of villages: Multi stage sampling method.

Out of 4 revenue divisions of West Godavari District, 1 revenue division (Eluru revenue division) was selected by simple random technique. Out of 16mandals of Eluru revenue division, 4 mandals were selected by following simple random technique, then from the list of all the villages in the selected 4 mandals, one village from each mandal was selected by following simple random technique. Data was collected from the persons who were involved in any type of agricultural work and gave consent, from all the four villages. Data regarding occupation of the residents of the village was collected from the Gram Panchayathi.

Study Period: Three months, (July 2019 to September 2019).

Study Population: People who were involved in any type of agricultural work.

Inclusion Criteria:
Agricultural workers who were residing in the same village for a duration of more than one year and gave consent.

Exclusion Criteria:
Agricultural workers who were not willing to participate in the study

Sample size(n) : All the persons who were involved in the study during the study period of three months, (n=1400).

Study tools : Pre-designed, pre-tested, semi structured questionnaire included questions regarding socio-demographic factors, history of exposure to snake bite. Knowledge questions regarding types of snakes, snake bites and their manifestations, first aid methods. Attitude questions like preferred treatment methods. Practice questions regarding protective measures to be taken. Flip charts displaying images of different types of snakes

Data collection: Data regarding occupation of the residents of the village was collected from the Gram Panchayathi. Data was collected by interview method from study population.

Data analysis: The study subjects were given a score of 1 for each correct answer and 0 for each wrong answer and were categorized in to having an adequate or Inadequate KAP (Knowledge, Attitude, Practice) based on their KAP scores. All the study subjects who had scored more than 50% for each KAP entity separately were categorized in to having adequate KAP. Data was analyzed using Microsoft Excel, SPSS 21 software trial version and data was displayed in the form of bar diagrams, graphs and tables etc.

RESULTS

In the present study about 1400 agricultural workers were involved, **Socio-demographic details** were as following, majority of the study subjects were males i.e.1036 members. About 82pc (1148) of the study subjects were literates. About 66pc (924) were daily wage laborers and 34pc (476) were land lords. Majority of the study subjects i.e. 62pc were belonging to socio economic status of Class three according to Modified BG Prasad classification of socio economic status 2019.

History of snake bite and its epidemiology

All of the study subjects i.e. 100pc were aware of >5 common local snake species

About 168 study subjects i.e. 12pc had history of snake bite.

Locality of snake bite for 168 study subjects with history of snake bite
a) At Home – 112 members
b) At farm – 56 members

Time of snake bite for 168 study subjects with history of snake bite
a) Dawn – 84 members
b) Dusk – 84
Majority of the study subjects had history of snake bite during rainy

season.

Knowledge of the study subjects regarding types of snakes, their identification.

Almost all 1372 study subjects out of 1400 i.e. 98pc knew that all snakes were not poisonous and can differentiate between poisonous snakes and non-poisonous snakes by looking at the snake. The knowledge of the study subjects regarding variations of snakes, snake bites and their manifestations was as described in Table no-1.

Table no – 1 Showing the number(n) and percentage(%) of study population with and without knowledge regarding variations of snakes, snake bites and their manifestations

Knowledge aspect	Yes	No
	n (%)	n (%)
All snakes are poisonous.	28(2%)	1372(98%)
Can differentiate between poisonous snakes and non-poisonous snakes by looking at the snake.	1372(98%)	28(2%)
Are all the snake bite marks looks similar?	616(44%)	784(56%)
Can differentiate between poisonous snakes and non-poisonous snake bite by looking at the bite marks on the victim's body.	0(0%)	1400(100%)
Victims of all types of snakes bite present with similar manifestations.	1064(76%)	336(24%)
Snake venoms are of various kinds like hemotoxic, neurotoxic, cytotoxic , myotoxic, etc.	168(12%)	1232(88%)

Knowledge of the study subjects regarding First aid of the Snake bites is shown in table no-2

Table no -2 Showing the number (n) and percentage(%) of study population having knowledge regarding First aid of snake bites.

Knowledge Aspect Of First Aid For Snake Bite	n (%)
Bitten part of the body should be kept immobilized and support should be provided	0 (0%)
Remove any tight clothing or constrictive metals like bands, bangles and rings near wound site	588 (42%)
Bitten site should not be cut and sucked	532 (38%)
Applying tight band or tourniquet proximal to site of bite should not be done	588 (42%)
Alcoholic beverages should be avoided	1400(100%)

Knowledge of the study population regarding treatment of snake bite

All the study participants, i.e.100 pc were aware of the availability of anti-snake venom in India and it aids in treatment of snake bite victim as shown in table no-3

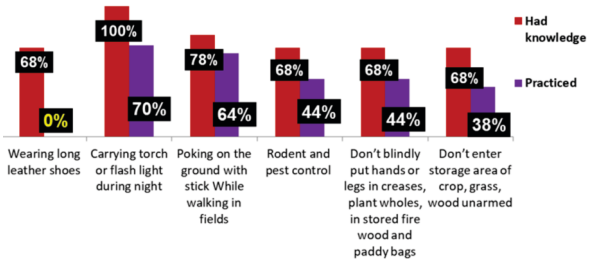
Table no -3 Showing the number(n) and percent(%) of study population having knowledge regarding treatment of snake bites.

Knowledge regarding treatment of snake bite	n (%)
Snake bite victim should be taken to hospital for treatment.	1288 (92%)
Both poisonous and non- poisonous snake bite victims need medical attention.	644 (46%)
Knew that anti venom is available for snake bite in India.	1400(100%)
knew that anti venom aids in the treatment of a snake bite victim.	1400(100%)
Remembering features of bitten snake if seen is useful in treatment of victim.	1400(100%)

Knowledge and practice of the protective measures against snake bites.

About 68 pc of the study subjects knew that wearing long leather shoes while walking in fields will protect them from snake bites but none of them were practicing it due to various reasons like discomfort, non-availability and economic reasons. Though 100pc of the study subjects knew that they should carry torch while going to farm during nights only 70pc of them were practicing it as shown in the Figure no-1 below.

Figure no - 1 Showing percentage of study population who had **nowledge and practicing** the protective measures against snake bites.



Attitude of the study subjects

About 8pc preferred traditional local methods of treatment and 100pc felt that snakes are divine and take revenge and are also useful for ecological equilibrium.

Over all knowledge

About 952 members i.e. **68pc** had adequate knowledge and 448 members i.e.32pc had inadequate knowledge.

About 616 members i.e.**44pc** had proper practice.

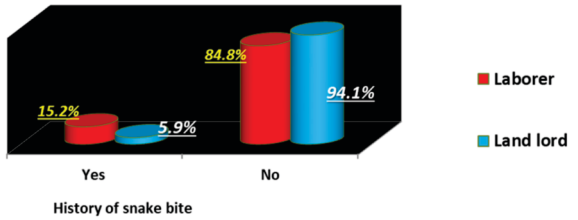
Associations were analyzed using Chi-square test, considering p-value <0.05 as statistically significant.

Males with adequate knowledge were more i.e. 70.3pc than females i.e. **61.5pc** with a **p-value of 0.002**, the association was statistically significant. Illiterates with better practices were more i.e. 66.7pc than literates i.e. 39pc with a **p-value of 0.000.**Type of agricultural work involved in did not have any statistically significant association with knowledge adequacy (p-value = 0.136) and proper practice (p- value =0.127)

History of snake bite among study subjects and associated factors using Chi-square test.

In the present study history of snake bite was more among female agricultural workers i.e. 15.4pc than male agricultural workers 10.8pc with Chi-square value of 5.336, degrees of freedom (df) -1, p-value of 0.021, which was found to be statistically significant. History of snake bite was more among illiterates i.e. 22pc than literates i.e. 9.8pc with Chi-square value of 30.410, df-1, p-value = 0.001. Similarly, type agricultural work involved in was significantly associated with the history of snake bite with p- value < 0.05 as shown in the figure no -2.

Figure No-2 Showing association between type of agricultural work involved in and history of snake bite



Chi-square value = 25.560, df-1, p-value = 0.000

DISCUSSION

In the present study all most all i.e. 98pc of the study subjects knew that all snake are not poisonous, while in a study of Pathak I, Metgud C.4 75pc of study participants knew that all Snakes were not poisonous and 81pc of the participants were aware of the difference in the bite marks of venomous and non-venomous snakes which was in contrary to the present study where none of the study subjects can differentiate between poisonous snakes and non-poisonous snake bite by looking at the bite marks on the victim's body. Similarly in a study of Harshal Tukaram Pandve, Anuja Makan, Tejashree Arun Kulkarni 5 65pc people had no information about identification of snakes. In the present study all the study participants felt that snakes are useful to maintain ecological equilibrium while in study of Pathak I, Metgud C.4 about 85.75pc of the study participants believed that Snakes are helpful to the farmers. In the present study about 12pc had history of snake bite and 8pc of the study population preferred local treatment methods, which was almost similar to study of Silva, A., Marikar, F., Murugananthan,

A., & Agampodi, S.7 17pc of the farmers had a previous history of snakebite and 11.5pc of the farmers preferred native/ ayurvedic treatment.

In the present study 100pc of the study participants knew that anti snake venom is available in India while in a study of Krishnaleela G., Selva Meena M., Praveena Daya A6 54pc of the study population had knowledge on availability of Anti snake venom (ASV) and 59.5pc believed that ASV is effective.

CONCLUSION

- Knowledge of the agricultural workers regarding snake bites was more but practices were less and it was found that still there is preference for local methods of treatment.

RECOMMENDATIONS

1) Health education through media and health workers during village health days and medical camps.
2) Taking help of the agricultural workers for the data of local species of snakes aids in better maintenance of logistics of anti-venoms as per the local needs.

Conflicts of interest - Nil

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