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Original Research Article

Are farmers aware of first aid measures for their injuries- a survey in rural Karnataka, India

Nayanabai Shabadi[1], Deepak Anil[1]*, Vanmathi A.[1], Saurish Hegde[1], Nagendra L.[1], Kruthika B. N.[1], Ravindra Salkatte[2], Sunil Kumar D.[1]

[1]Department of Community Medicine, JSS Medical College, JSS Academy of Higher Education and Research, Sri Shivarathreeshwara Nagara, Mysuru, Karnataka, India
[2]Senior Medical Officer, Primary Health Centre Hadinaru Village, Nanjangud Taluk, Mysuru District, Karnataka, India

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***Correspondence:**
Dr. Deepak Anil,
E-mail: deepakanil7@gmail.com

ABSTRACT

Background: Agriculture, being the main source of livelihood in most parts of the country, has some hidden dangers to the farmers which get them injured or ill.
Methods: A community-based cross-sectional study was conducted for 2 months among farmers aged >18 years of age residing in rural Mysuru. A purposive sampling technique was used and the data was collected from 150 farmers through house-to-house interviews using a pre-tested structured questionnaire.
Results: The survey took account of the farmer's opinion on first aid procedures; a vast majority of the practices weren't supported by any scientific evidence. Ineffective first-aid procedures could worsen the problem. Thus, the farmers should receive sufficient first aid training and education, enabling them to take appropriate action for themselves and their communities in an emergency.
Conclusions: The survey took account of the farmer's opinion on first aid procedures; a vast majority of the practices weren't supported by any scientific evidence. Ineffective first-aid procedures could worsen the problem. Thus, the farmers should receive sufficient first aid training and education, enabling them to take appropriate action for themselves and their communities in an emergency.

Keywords: Burns, Fainting, Farmers, First aid, Injury, Wound

INTRODUCTION

Agriculture employs more than a third of the world's workforce, making it the second-largest source of employment worldwide. Globally, an estimated 1.3 billion workers are involved in agricultural production.[1] Agriculture is the backbone of our country, accounting for over 30% of GDP, and is the largest source of livelihood in India. It is the primary source of income for around 58% of India's population and 70% of our rural families are still largely dependent on it for a living, with 82 % of farmers being small and marginal.[2,3] However, it is one of the most dangerous industries in the world according to the International Labour Organization (ILO) and is ranked one of the three most dangerous occupations, along with mining and construction.[4]

First aid is described as the evaluation and action that is provided quickly by a bystander to preserve life and to minimize the progress of injuries or illness occurred, until any medical help is obtained. The basic goal of first aid is to relieve pain, facilitate healing, and limit damage. The first measure adopted for the care of accidents and common illnesses frequently determines the future course

of disease and complication rates. Therefore, basic knowledge and understanding of first aid can be useful for individuals who find themselves in emergencies. However, there are various misconceptions and erroneous behaviors which have been reported among rural people related to diseases, injuries, and first aid procedures.[5-7]

Every year, a large number of agricultural employees get injured or ill as a result of their occupational risks. The contributory causes of such accidents often include working with machinery, equipment, and animals; excessive noise and vibration; slips, trips, and falls from heights; lifting heavy weights and other musculoskeletal labor; exposure to dust and other organic compounds, chemicals, and infectious agents.[1,8] However, the concern is whether farmers are equipped to deal with such situations and whether they can offer first aid until they are transported to a hospital. Although workplace safety and health is a critical problem on an individual, societal, and national level, it has received minimal attention to date.[9]

In this context, the current study was conducted to assess awareness and understanding regarding first aid among farmers residing in rural Mysuru.

METHODS

This was a community-based cross-sectional study done under the rural field practice area of the department of community medicine, JSS medical college, Mysuru (Primary Heath Centre Hadinaru and Primary Health Centre Suttur) for a period of 2 months (September 2021 to October 2021). All the farmers aged >18 years of age were included in the study. The study protocol was approved by the Institutional Ethics Committee and consent was obtained from the participants after explaining the purpose and procedure of the study.

Based on the prevalence of 25.6% from a previous study conducted in rural Dehradun, at a confidence interval of 95% and absolute precision of 7%, the sample size was calculated as 149 (rounded to 150).[9]

The sampling technique used was purposive sampling. The data was collected through house-to-house interviews until the required sample size of 150 subjects was reached. In case there was more than one member in the house engaged in agriculture-related work, the senior-most member of the family was taken for the study.

Data were obtained using a pre-tested structured questionnaire. The questionnaire asked about socio-demographic information, first-aid beliefs and behaviors, and the incidents needing first-aid care. The questionnaire comprised about 26 questions, of which 8 were related to social and demographic data such as age, sex, education, etc. The next five questions were based on a subjective evaluation of whether they were familiar with first-aid concepts if the respondents had observed an agricultural work accident, who can give first aid, the emergency number to be contacted in case of an emergency, and the situations which require first aid care.

The next set of questions was used to assess respondents' knowledge of how to deal with victims of the most prevalent injuries that occur as a consequence of agricultural work-related accidents.

The data collected was entered in Microsoft Excel 2019 spreadsheet followed by analysis using SPSS version 26 (Statistical package for the social science) Windows, version 26.0. (IBM Corp. Released 2019. IBM SPSS Statistics for Armonk, NY, USA). The demographic characteristics such as age, gender, education, etc. were represented using an arithmetic mean, standard deviation, and percentages. The data distribution was represented using appropriate tables.

RESULTS

The study was conducted on 150 agricultural workers. The majority of them were males (79.3%) and nearly half the sample population belonged to the age category of about 41-60 years (46%). Most of them were illiterate (39.3%), a few completed high school (30%), and a few were educated up to the post-high school level (10%).

Table 1: Socio-demographic characteristics of farmers.

Variables	Categories	Frequency (%)
Gender	Male	119 (79.3)
	Female	31 (20.7)
Age (years)	<20	2 (1.3)
	21-40	50 (33.3)
	41-60	69 (46.0)
	61-80	3 (2.0)
Education	Illiterate	59 (39.3)
	Primary	16 (10.7)
	Middle school	11 (7.3)
	High school	45 (30.0)
	Post high school	15 (10.0)
	Graduate	4 (2.7)

When questioned about their knowledge of first aid 115 (76.7%) people had heard about the term first aid and 120 (80%) felt that giving first aid is necessary. 53 (35.3%) reported having given first aid in their life. More than half (54.7%) of agricultural workers in the study population felt that first aid can be given by any trained person whereas 48 (32%) felt that only doctors were supposed to give it.

The agricultural workers in the sample had different practices of first aid like for wound injuries, 22 (14.7%) apply medication like Dettol/tincture whereas 44 (29%) prefer herbal medication like turmeric. For fractures, 21 (16.3%) felt that giving support to the fractured arm and

stabilizing it is the best first aid and 17 (11.3%) felt that tying it with a cloth is a better option.

When there is a burn injury most of the study population 51 (34%) preferred applying topical medicines to the affected area, 9 (12.7%) preferred applying home-based oil like coconut oil, and 9 (6%) had the habit of using chili powder. In case of any foreign body in the eye, the majority of them 81 (54%) splash water and 24 (16%) blow air.

A greater percentage of the study population (22%) use soap water for chemical poisoning and about 14% use salt water. In case of any electrocution 83 (55.3%) beat the person with a stick to break the contact with the electrical source and 15 (10%) were advised to rub their feet and hand as a first aid measure.

Table 2: Awareness of farmers on first aid.

Questions	Response	Frequency (%)
Have you heard about first aid?	Yes	115 (76.7)
	No	35 (23.3)
Do you think giving first aid is necessary	Yes	120 (80)
	No	20 (13.3)
	Not sure	10 (6.7)
Have you ever given first aid before	Yes	53 (35.30)
	No	97 (64.70)
Who should give the first aid	Doctors	48 (32.0)
	Nurses	1 (0.7)
	Medico social worker	7 (4.7)
	Any trained person	82 (54.7)
	Not sure	12 (8.0)

Accidents like snake bites, animal bites, and scorpion bites are very common in agricultural fields.

When a person is bitten by a snake most of the study population 60 (40%) preferred tying the region above the bite with a rope/ thread as a first-aid measure while 29 (19.3%) felt cutting the bite area and removing the blood as a first-aid measure to save the person.

Washing the site of injury with water and soap was followed by the majority of the farmers in case of animal bites (37.3%) and insect bites (6.7%). Similarly, in the case of scorpion bite 13 (8.7%), tie the region with a rope to prevent blood circulation. For fainting, few practiced splashing water on the face (21.3%) while 11.3% wanted to make the person lie down and relax (11.3%).

In case of seizures, most preferred holding iron materials firmly (62%). 23.3% of the study population pour water on the head in case of nose bleeding as a first-aid measure while 18% preferred lying down as the best first aid measure.

Table 3: Perception of farmers towards first aid for various injuries.

Awareness/ perception	First aid given	Frequency (%)
Wound	Apply band-aid/tie with a cloth	19 (12.7)
	Clean with cotton	21 (14.0)
	Apply medications (Dettol/tincture)	22 (14.7)
	Apply turmeric	44 (29)
Fractures	Band-aid/tie with a cloth	17 (11.3)
	Support and stabilize	21 (16.3)
	Rest	8 (5.3)
Burns	Wash with water	22 (14.7)
	Apply Ointment	51 (34)
	Use of oils (coconut)	19 (12.7)
	Herbal medicines	12 (8.1)
	Chilli powder	9 (6.0)
Foreign body	Blow air	24 (16)
	Splash water	81 (54)
	Use eye drops	10 (6.7)
Chemical poisoning	Soap water	33 (22)
	Saltwater	21 (14)
	Buttermilk	12 (8)
Electrocution	Beat with a stick	83 (55.3)
	Rub their feet and hands	15 (10)

Table 4: Perception of farmers towards first aid for various injuries.

Awareness/ perception	First aid given	Frequency (%)
Snakebite	Cut	13 (8.7)
	Cut and tie with a rope	29 (19.3)
	Just tie with a rope	60 (40.0)
	Apply medicine	11 (7.3)
Animal bite	Wash with soap and water	56 (37.3)
	Tie with cloth	10 (6.7)
Scorpion bite	Tie with rope	13 (8.7)
	Wash	11 (7.3)
	Apply medicine	9 (6.0)
Insect bite	wash with water and soap	10 (6.7)
	Herbal medicine	8 (5.3)
Fainting	Splash water on the face	32 (21.3)
	Give water	32 (21.3)
	Salt/sugar/lime water	6 (4.0)
	Lie down	17 (11.3)
Epilepsy	Mouth guard	3 (2.0)
	Iron rod	93 (62.0)
Nose bleeding	Water on head	35 (23.3)
	Oil on head	18 (12.0)
	Lie down	27 (18.0)

DISCUSSION

Basic knowledge of first aid skills is very necessary for agricultural workers who come across many accidents in their day-to-day work.

In contrast to a study done in Dehradun in the rural village of Doiwala block, which found that just 25.6% of respondents were aware of the word first aid, our study found that approximately 79.3% of agricultural workers have heard of the term.[10]

Regarding the management of fractures, in a study done among farmers in Poland majority of them (90%) stated that immobilizing the fracture at the accident site is a better first aid measure.[11] In our study, 16.3% of farmers' perspective was the same whereas 11.3% preferred tying a cloth at the fracture site

India is rich in cultural practices, and several first aid techniques that have been medically proved to be effective have been used for ages, such as applying turmeric to wounds which were also mentioned by our participants (29% preferred turmeric for wounds).[12]

Unfortunately, certain superstitious customs without any scientific background remain in practice, such as handing an iron rod to someone who is having seizures (62%). According to a study conducted among school teachers in Karnataka, 42.7% of teachers were in agreement with using iron rods to control epilepsy.[5]

According to WHO guidelines, nothing should be applied to the affected area or limb in case of a snake bite to prevent the poison from spreading.[14] But the study done in Calicut, south India regarding knowledge and perception and first aid measures in case of snake bite showed that 42.3% believed in making an incision close to or on the biting site, and 13.5% in sucking the bitten site, similar answers were given by our study participants (19.3%- cut and tie with rope).[14]

Although the survey incorporated farmers' perspectives on first aid measures, the majority of the practices were not backed by science. Improper first aid measures may even worsen the situation. The major limitation of the study was that it was done on a smaller population which mainly consist of the male population (79.3%). The study vaguely mentioned the practices in rural areas. In-depth interviews are needed for a better understanding of their practices, which may help us in planning a proper training program in first aid measures.

CONCLUSION

The first few seconds and minutes can make all the difference when it comes to saving a life. The majority of healthcare facilities are located distant from farmers' places of work. Access to those health care facilities might be difficult at times Thus, the farmers should be educated and trained in appropriate first aid techniques, empowering them to take better care of themselves and their communities during times of emergency.

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