ISSN- 0301-1216
Indian J. Prev. Soc. Med. Vol. 57, No.3, 2026

A Study on Awareness Regarding Zoonotic Diseases among ASHA Workers in Selected Mandals of Vizianagaram District, Andhra Pradesh

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ABSTRACT

Background: Zoonotic diseases are infections transmitted between animals and humans and represent an important public health concern, particularly in rural and underserved communities. Accredited Social Health Activist (ASHA) workers serve as a vital link between communities and the healthcare system. Their awareness of zoonotic diseases, modes of transmission, risk factors, preventive measures, and appropriate referral practices is therefore important for strengthening community-level prevention and control. **Methods:** We used a semi-structured questionnaire to assess ASHA workers' knowledge and awareness of zoonotic diseases. We conducted a pre-test and a post-test to assess the effectiveness of the awareness programme. **Results:** The findings revealed a high level of awareness regarding zoonotic diseases, with 95.45% of respondents recognising the possibility of animal-to-human transmission. Knowledge of appropriate dog-bite management was generally good, with most respondents identifying medical consultation (88.63%), anti-rabies vaccination (81.81%), and wound washing with soap and water (77.27%) as appropriate measures. Following the awareness programme, all 44 participants (100%) reported improved knowledge, confidence in disseminating information, and willingness to attend similar programmes. Overall, participants expressed a highly positive response, citing new knowledge (45.45%), willingness to share information (25.00%), interest in future programmes and satisfaction with the programme (11.36% each), and the need for more frequent awareness activities (6.81%). **Conclusions:** The study indicates that ASHA workers had generally good awareness of zoonotic diseases, although misconceptions regarding disease classification, transmission routes, and preventive practices persisted. The awareness programme improved participants' self-reported knowledge and confidence in educating communities.

Key words : Zoonotic diseases, ASHA workers, Awareness, Rural areas, Prevention and Public Health

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Citation: Supriya RA, Srilakshmi N, Kumar Suresh B., Vishnuvardhan G. A Study on Awareness Regarding Zoonotic Diseases among ASHA Workers in Selected Mandals of Vizianagaram District, Andhra Pradesh. Indian J Prev Soc Med, 2026; 57 (3): **308-316**. **DOI:** https://doi.org/10.67212/ijpsm.v57i3.281

Sequence of Article: **Submission: 17.08.2026** **Accepted: 28.09.2026** **Published: 30.09.2026**

Prior Publication: Nil; Source of Funding: Nil; Conflicts of Interest: None, Article # 256/345

Introduction

Zoonotic diseases, defined as infections that are naturally transmitted between vertebrate animals and humans, remain a major public health concern. They account for nearly 60% of all known infectious diseases and approximately 75% of emerging infectious diseases worldwide.[1] In India, frequent interactions among humans, livestock, companion animals, and wildlife, particularly in rural communities, create favourable conditions for the transmission of these diseases.[2] Several zoonoses, including rabies, leptospirosis, brucellosis, Japanese encephalitis, and scrub typhus, continue to impose substantial health and economic burdens. Despite this, awareness of their transmission, preventive measures, and the importance of seeking timely medical care

often remains inadequate. Limited knowledge contributes to delayed diagnosis, unsafe animal-handling practices, and poor adoption of preventive measures.[3]

The Accredited Social Health Activist (ASHA), introduced under the National Rural Health Mission, forms the foundation of India's community-based primary healthcare system and serves as a crucial link between rural populations and public health services.[4] Through regular household visits and community outreach activities, ASHAs promote health, support disease prevention, facilitate behaviour change, and improve access to essential healthcare services. Their responsibilities include maternal and child healthcare, immunization, nutrition, sanitation, and the control of communicable diseases.[5] Because of their close relationship with households and the trust they have earned within their communities, they are well placed to influence health-seeking behaviour and communicate evidence-based health information.

Given their extensive engagement at the community level, improving ASHAs' knowledge of zoonotic diseases could substantially strengthen local prevention and control efforts. Well-informed ASHAs can educate community members on safe animal-handling practices, personal and environmental hygiene, food safety, responsible pet ownership, animal vaccination, and the importance of seeking prompt medical care following high-risk exposures such as animal bites.[1] They can also contribute to the early identification and referral of suspected cases, encourage reporting of unusual disease events, support community-based surveillance, and promote intersectoral collaboration within the One Health framework. Collectively, these roles can enhance grassroots preparedness and strengthen efforts to prevent and control zoonotic diseases.[3,6]

Materials and Methods

***Study area*:** A descriptive cross-sectional study was conducted among 44 Accredited Social Health Activists (ASHAs) (sample size, n = 44) serving rural communities across 28 villages in Garividi Mandal and 16 villages in Gurla Mandal of Vizianagaram District, Andhra Pradesh, India. All 44 ASHA workers constituted the study population and were involved in providing healthcare services to the respective communities. An awareness programme on zoonotic diseases was subsequently conducted for the participating ASHA workers on 2 July 2025 at the Department of Veterinary Public Health and Epidemiology, College of Veterinary Science, Garividi, Andhra Pradesh.

***Data collection and analysis*:** A semi-structured questionnaire containing both open-ended and closed-ended questions was developed to assess the knowledge and awareness of ASHA workers regarding zoonotic diseases. To evaluate the effectiveness of the awareness programme, a pre-assessment (entry behaviour) was conducted immediately before the training session, followed by a post-assessment (exit behaviour) immediately after its completion. This approach enabled the assessment of changes in participants' knowledge following the educational intervention.

Figure- 1: Interviewing ASHA workers using semi-structured questionnaire



To ensure clarity and ease of understanding, the questionnaire was prepared in the local language (Telugu). After data collection, all completed questionnaires were translated into English for data entry and analysis.

The questionnaire consisted of sections covering participants' socio-demographic characteristics, awareness of zoonotic diseases, knowledge of common zoonoses, modes of disease transmission, preventive measures, animal bite management, and rabies post-exposure prophylaxis. In addition, it explored participants' attitudes towards zoonotic disease prevention and assessed their perceived role in community health education, early recognition, and timely referral of suspected zoonotic disease cases.

Figure-2: Awareness session on zoonotic diseases for ASHA workers



Results

***Socio-demographic characteristics*:** A total of 44 ASHA workers participated in the study. 41 participants (93.18%) had completed secondary education, while 2 (4.54%) had attained intermediate education and 1 (2.27%) had completed postgraduate education. The majority 37 (84.09%) participants were between 30 - 50 years of age. 4 (9.09%) participants were older than 50 years whereas only 2 participant (4.54%) were below 30 years of age (Table 1). All participants belonged to rural communities.

Table 1: Socio-demographic details of study group

Sl. No.	Name of the ASHA worker	Age (yrs)	Qualification	Experience (in yrs)	Working place	Mandal
1.	Y. Simhachalam	47	X Std	19	Penubarthi	Gurla
2.	Adilakshmi	43	X Std	10	Jammupeta	Gurla
3.	P. Lakshmi	30	X Std	07	Muddadapeta	Gurla
4.	P. Suramma	48	X Std	20	Badaripeta	Gurla
5.	R. Sridevi	42	X Std	20	Sadanandapuram	Gurla
6.	V. Padma	40	12^{th} Std	18	Tettangi	Gurla
7.	Rama tulasi	34	X Std	19	Lavadam	Gurla
8.	Satyavathi	35	X Std	10	Rowthupeta	Gurla
9.	S. Radha	47	X Std	19	Peda bantupalli	Gurla
10.	Ch. Lakshmi	39	X Std	20	Kondagandredu	Gurla
11.	J. Satyavathi	41	X Std	18	Jammu	Gurla
12.	D. Gowri	54	X Std	18	Chodavaram	Gurla
13.	N. Lakshmi	35	X Std	13	Gujjangivalasa	Gurla

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Sl. No.	Name of the ASHA worker	Age (yrs)	Qualification	Experience (in yrs)	Working place	Mandal
14.	B. Lakshmi	40	X Std	19	Kondagandredu	Gurla
15.	U. Pyditalli	42	X Std	19	Palligandredu	Gurla
16.	K. Damayanthi	40	X Std	26	Pakeerukittali	Gurla
17.	Ch. Eswaramma	38	X Std	18	Geddapuvalasa	Garividi
18.	K. Ramanamma	46	X Std	19	Devada	Garividi
19.	R. Krishnaveni	42	X Std	18	Koduru	Garividi
20.	K. Ramulamma	29	X Std	11	Arthamuru	Garividi
21.	D. Lakshmi	33	X Std	0.6	Thondrangi	Garividi
22.	R. Venkata lakshmi	37	X Std	17	V.P. Rega	Garividi
23.	L.Lakshmi	46	X Std	20	Seripeta	Garividi
24.	S.Eswaramma	43	X Std	13	Garividi PHC	Garividi
25.	Ch. Padmavathi	39	X Std	18	Kondapalem 2	Garividi
26.	S. Ganga Bhavani	46	X Std	16	Kondalakshmipuram	Garividi
27.	Kanakamma	30	X Std	08	Geddapuvalasa	Garividi
28.	T. Chandrakala	39	X Std	14	Kelupuram	Garividi
29.	G. Papamma	52	X Std	18	Arthamuru	Garividi
30.	Gunti. Thoudamma	50	X Std	20	Duvvam	Garividi
31.	Ch. Bharathi	36	X Std	13	Sivaram	Garividi
32.	A. Vijayakumari	57	X Std	17	Garividi	Garividi
33.	B. Jgadeeshwari	30	X Std	10	Garividi PHC	Garividi
34.	P. Kalyani	40	X Std	19	Kondapalem-II	Garividi
35.	Y. Lakshmi	38	X Std	19	Koduru	Garividi
36.	Y. Jayalakshmi	36	X Std	14	Dummeda	Garividi
37.	Ch. Ramanamma	30	X Std	30	Konuru	Garividi
38.	P. Mangamma	48	X Std	28	Garividi	Garividi
39.	K. Vanajakshi	37	X Std	03	Kondapalem - I	Garividi
40.	G. Lakshmi	47	X Std	19	Kondapalem	Garividi
41.	M. Chandravarahalu	45	X Std	19	Nadipenapeta	Garividi
42.	J. Lakshmi	52	X Std	19	Kondapalem -III	Garividi
43.	K. Lakshmi	44	12^{th} Std	20	Thondrangi	Garividi
44.	G. Eswaramma	28	M.com	01	Thatigudem	Garividi

***Pre and post-assessment*:** Most respondents demonstrated awareness that diseases can be transmitted from animals to humans. Overall, 95.45% acknowledged the possibility of animal-to-human disease transmission, whereas 4.54% believed such transmission was not possible (Table-2).

When asked to name zoonotic diseases, rabies was the most frequently identified disease by 34 (77.27%) respondents. COVID-19 (coronavirus) was mentioned by 4 (9.09%) respondents, while 3 (6.81%) respondents identified bird flu and dermatitis. Swine flu was reported by 2 (4.54%) respondents, whereas 1 (2.27%) participant each mentioned dengue, and worm infestation, 1 participant (2.27%) each considered cholera, snake bite, and scorpion bite to be zoonotic diseases (Table- 2).

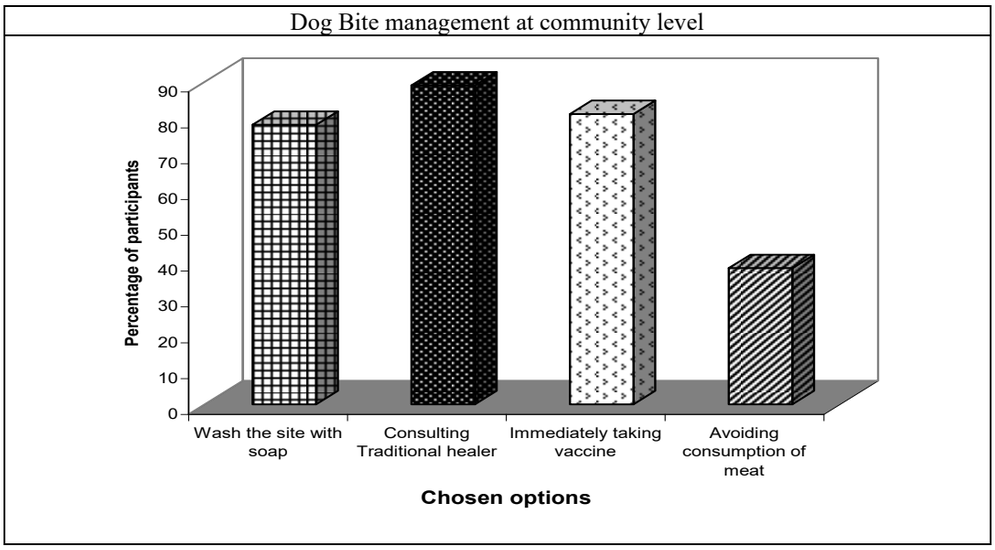
Table-2: Percentage of respondents giving in different examples for zoonoses.

Given example	No.	%
Rabies	34	77.27
Corona	4	9.0
Bird flu	3	6.81
Dermatitis	3	6.81
Swine flu	2	4.54
Dengue	1	2.27
Cholera	1	2.27
Worm infestation	1	2.27

Participants were also asked about possible routes of zoonotic disease transmission. The response options included animal bites, consumption of meat, consumption of milk, contact with animal excreta, and "all of the above". Animal bites were the most commonly recognised transmission route, identified by 24 (54.54%) respondents. Consumption of meat was selected by 12 (27.27%) participants, followed by contact with animal excreta by 9 (20.45%) and consumption of milk by 5 (11.36%) participants. In addition, 17 (38.63%) respondents correctly recognised that zoonotic diseases may be transmitted through all of these routes, reflecting a broader understanding of multiple exposure pathways. Because respondents could select more than one option, the total percentage exceeded 100%.

Nearly two-thirds of the respondents (63.64%) reported having encountered complaints of illness among individuals following the consumption of animal-derived products, including meat and milk, within their respective villages. The remaining one third (36.36%) indicated that no such complaints had been observed in their working areas.

Figure-3: Different options chosen by participants at community level for dog bite management



Knowledge regarding appropriate management following a dog bite was generally encouraging. Consulting a medical practitioner was identified as the most appropriate action by 39 (88.63%) of respondents. Immediate administration of the anti-rabies vaccine was recognized by 36 (81.81%), while 34 (77.27%) correctly reported that the wound should be washed thoroughly with soap and water. However, 16 (36.36%) believed that avoiding meat consumption after a dog bite was an appropriate preventive measure. None of the respondents recommended treatment from traditional healers as a management option (Fig. 1).

Following the awareness programme, all of the 44 (100%) participants reported that they acquired knowledge of zoonotic diseases by selecting the "Yes" response. None indicated only partial knowledge or a lack of awareness.

When asked to identify the most useful component of the training, information on disease transmission from cats to pregnant women was selected by 21 (47.72%) participants. Information describing the various routes of disease transmission from animals to humans was considered the most beneficial by 13 (29.54%). Knowledge related to tuberculosis transmission between animals and humans and food hygiene practices was each identified by 5 (11.36%) of participants. Information on diseases transmitted from pet animals was regarded as the most valuable by 4 (9.09%), whereas 3 (6.81%) highlighted hand hygiene (hand washing). Clean milk production was considered the most useful topic by 2 (4.54%) of participants.

The programme also resulted in a high level of confidence among participants. All respondents (100%) expressed confidence in disseminating information in rural communities about zoonotic diseases, and none reported a lack of confidence. Similarly, every participant indicated willingness to attend similar awareness programmes in the future, with all selecting the "Yes" response.

Participants' comments reflected an overwhelmingly positive perception of the programme. Nearly half (45.45%) stated that they had gained valuable knowledge about zoonotic diseases that they had not previously known. One-quarter (25.00%) expressed their intention to share the information with other members of their villages. A further 5 (11.36%) respondents showed interest in participating in similar programmes in the future, while an equal proportion appreciated the organization of the programme and expressed satisfaction with their participation. In addition, 3 (6.81%) participants recommended that such awareness programmes should be conducted more frequently.

Discussion

***Baseline Knowledge and Gaps*:** The study showed that most ASHA workers understood that diseases can be transmitted from animals to humans, indicating generally good baseline knowledge of zoonotic diseases. This observation is consistent with recent reports from India, where growing public awareness has been linked to the expansion of One Health initiatives and community-based educational programmes,[7] as well as studies from other countries.[8,9] Despite this encouraging level of awareness, a small proportion of respondents did not recognise the possibility of animal-to-human disease transmission, suggesting that important knowledge gaps remain.

***Disease Recognition and Misconceptions*:** Rabies was the most widely recognized zoonosis, reflecting extensive national and international prevention campaigns[10]. Conversely, some participants misclassified cholera, snakebites, and scorpion stings as zoonotic. This confusion reveals difficulties in distinguishing infectious zoonoses from water-borne or toxin-mediated conditions[11]. Similar knowledge gaps and misclassifications have been documented among medical and veterinary cohorts across India [12, 13], underlining the necessity of educational programs that clearly delineate specific transmission routes.

***Transmission Routes*:** While awareness of animal bites was exceptionally high, understanding alternative transmission routes was less comprehensive. Comparatively fewer respondents recognized contaminated meat, milk, or animal excreta as potential infection sources. This lopsided awareness suggests that public perception remains heavily focused on rabies rather than the broader spectrum of zoonotic threats, mirroring trends observed in livestock-farming communities globally[14-16] and research imbalances within the subcontinent [17].

***Surveillance and Dog-Bite Management*:** Nearly two-thirds of respondents reported animal-bite illnesses within their villages. Though unconfirmed by laboratory diagnostics, these community-level observations offer valuable early warning signals for integrated One Health surveillance networks [18-21].

Knowledge of immediate dog-bite management was generally strong. Most workers correctly recommended medical consultations, immediate wound washing, and prompt vaccination, aligning with World Health Organization (WHO) protocols[22, 23]. However, over one-third believed that avoiding meat post-bite was a valid preventive measure. This coexistence of traditional dietary myths alongside evidence-based practices highlights the need for targeted behavior change communication [24, 25].

***Post-Intervention Assessment*:** The educational program successfully generated substantial improvements in participant knowledge and self-efficacy. Post-intervention, all participants reported a clear understanding of zoonoses, felt confident educating their communities, and expressed willingness to attend future training. These outcomes reinforce evidence that structured interventions effectively enhance One Health capacity and grassroots participation [26, 27].

***Unfamiliar Risks and Broadened Scope*:** Information on toxoplasmosis transmission from cats to pregnant women was rated as highly valuable. Because public familiarity with toxoplasmosis is limited compared to rabies, this unfamiliar topic effectively addressed a critical knowledge gap[28-30]. Participants also valued guidance on tuberculosis, hand hygiene, and clean milk production. This interest supports a comprehensive educational strategy that expands focus beyond high-profile diseases to build a balanced understanding of zoonotic risks[31].

***Policy Integration and Conclusion*:** Feedback confirmed the program's strong acceptability; nearly half gained new insights, and a quarter intended to share this information locally. This grassroots engagement directly supports India's National Action Plan for Dog-Mediated Rabies Elimination (NAPRE) and the global "Zero by 30" initiative, both of which rely on community ownership and intersectoral collaboration [32, 33].

Ultimately, while baseline awareness of rabies is high, significant misconceptions about transmission and management persist. Periodic, structured educational programs integrated within a One Health framework are essential to enhance zoonoses literacy, address deep-rooted cultural myths, and drive sustainable community-based disease prevention.

Conclusion

The findings of this study indicate that ASHA workers possessed a generally good level of awareness regarding zoonotic diseases, particularly with respect to animal-to-human disease transmission and rabies. Nevertheless, important misconceptions related to disease classification, transmission pathways, and preventive practices were identified, highlighting the continued need for targeted public health education.

The awareness programme was effective in improving participants' self-reported knowledge, confidence in educating their communities, and willingness to participate in future educational initiatives. These outcomes demonstrate the potential of structured training programmes to strengthen zoonoses literacy and empower frontline community health workers to play a more active role in disease prevention.

Overall, the study underscores the importance of community-based awareness programmes delivered within the One Health framework. Regular educational interventions, supported by culturally appropriate health communication strategies, have the potential to enhance public understanding of zoonotic diseases, encourage evidence-based preventive practices, and strengthen community participation in the prevention, early detection, and control of zoonotic diseases.

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