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KNOWLEDGE AND SELF REPORTED PRACTICES REGARDING LEPTOSPIROSIS AMONG MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT (MGNREGA) WORKERS IN A RURAL AREA IN TRIVANDRUM.

Community Medicine

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ABSTRACT

Leptospirosis is a zoonotic disease by pathogenic bacteria belonging to the genus Leptospira. It is recognized as an emerging global public health problem due to its increased incidence in both developed and developing countries.

Aim: To assess the knowledge and practices regarding leptospirosis among adults in rural population of Nellanad panchayat, Trivandrum working under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

Materials and methods: A community based cross-sectional study was conducted among 250 MGNREGA workers. Out of the 250 study participants, 103(41.2%) individuals were found to have good knowledge about leptospirosis.

Conclusion: Although the level of good knowledge regarding leptospirosis was 41.2%, this knowledge was not translated into practice of personal preventive measures.

KEYWORDS

Leptospirosis, knowledge, Mahatma Gandhi National Rural Employment Guarantee Act.

Introduction

Zoonotic diseases are an important threat to public health worldwide. They represent about 70% of the number of emerging infectious diseases in recent time.[1] Leptospirosis is an infectious zoonotic disease of veterinary and public health importance caused by pathogenic bacteria belonging to the genus Leptospira. The disease is transmitted via contact with tissue or urine of infected animal reservoirs such as cattle, sheep, pigs, dogs and rodents. Transmission occurs via direct contact of the mucous membrane or broken skin with urine or tissue of infected animals or indirectly with contaminated environment especially water contaminated with urine of infected animals.[2,3]

Human leptospirosis manifest as a wide spectrum of clinical illness, ranging from subclinical or mild infections to severe multi-organ failure associated with high mortality.[4,5,6] The disease presents as mild febrile illness and subsides without complications in the majority of patients. Leptospirosis is recognized as an emerging global public health problem due to its increased incidence in both developed and developing countries.

According to World Health Organization, the incidence of leptospirosis ranges from 0.1 to1 per 1,00,000 per year in temperate climates and 10–100 per 1,00,000 in the humid tropics.[7] It has a considerable public health and economic impact, primarily, an occupational disease affecting many labourers including farmers, field workers, municipal workers, fishermen, sugarcane cutters etc.Human leptospirosis is an endemic infection in India and it has great potential for outbreaks to occur, so the disease surveillance as well as awareness programs should be stepped up and sustained.[8]

Occupational factors such as outdoor activities, walking barefoot, drinking stream water ,presence of cut or wound on body parts during work and environmental factors such as contact with rodents, presence of cattle in the house, contact with garbage, and contact with soil or water contaminated with urine ofratsare the risk factors identified to be associated with disease.[9,10] National Rural Employment Guarantee Scheme (NREGS) is an initiative by the government of India to eradicate poverty by ensuring employment to the rural poor. Most of the works done are eco-restoration works, like cleaning ponds, clearing shrubs and road works.[11] Pond cleaning activities included entering the water, pulling up foliage and removing debris. Ponds are often contaminated with the urine of rodents and other mammals which are reservoirs of leptospirosis.[12]MGNREGA workers have a risk for contracting leptospiral infection during the course of their work and hence they are given Doxycycline prophylaxis .This study was conducted to assess the knowledge and practices regarding leptospirosis among MGNREGA workers in Nellanad panchayat, Trivandrum, India.

Materials and Methods

Study design: Cross sectional study.

Study setting : Community.Nellanadpanchayat, in NedumangadTaluk of Trivandrum district

Study population : Adults in rural population of Nellanad panchayat, working under MGNREGA

Inclusion criteria: All adults working under MGNREGA present during the dates of interview.

Study tool: A Pre-tested Semi-structured questionnaire. Study variables: Age,Gender,Education, Mode of spread of leptospirosis, Common symptoms of leptospirosis, Complications of leptospirosis, Preventive measures against leptospirosis, Sources of information regarding leptospirosis, Self -reported practices regarding leptospirosis.

Sample Size

Sample size was calculated as per the knowledge and practice score on leptospirosis obtained from a previous study.[15] Sample size is calculated according to the formula

$N = (1.96)^2 pq/L^2 + 10\%$ non respondents.

$p = 64.5\%$ $q = 100-p = 35.5\%$

$L = 10\%$ of p .Obtained sample size is 250.

Sampling Technique : Cluster Sampling

Sampling

Ten wards were randomly selected out of 16 wards of Nellanad panchayat. The first house was selected randomly and consecutive houses were surveyed till 25 MGNREGA workers were surveyed from each ward. If no one was available at one house, the adjacent house was taken for study.

Data analysis: The data collected from the study was entered into Microsoft Excel and statistical analysis was done using IBM SPSS version 16.Knowledge level was assessed by scoring ten questions. The maximum score was 10. Each correct response to knowledge questions received one mark, while 'do not know' and incorrect responses were given a score of zero. Categorical variables are expressed in frequencies and percentages. A 'good' level of knowledge about leptospirosis was taken as a score of 50% or more.Chi-square test was used to evaluate statistical significance of association.p value less than 0.05 was considered as significant.

Consent: Informed verbal consent from the subjects was obtained.

Results

Demographics.

Among the 250 study participants, majority [234(93.6%)] were females.Mean age of the study participants was 46.6 ± 10.2 years.

Knowledge of study participants regarding leptospirosis

Although all of the study participants had previously heard about

leptospirosis, only 103(41.2%) individuals were found to have good knowledge about leptospirosis.(fig 1) The score for knowledge about leptospirosis ranged from 0 to 8. The mean knowledge score was 4.2 (SD 1.8). Table 1 shows the aspects of knowledge of study participants regarding leptospirosis.

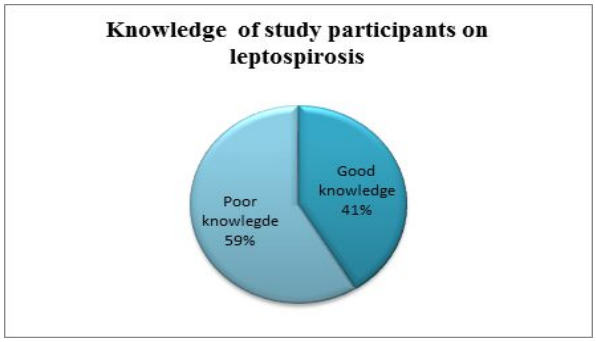

Figure 1: Knowledge among study participants about leptospirosis.

Table 1 : Knowledge about leptospirosis among study participants

Knowledge regarding leptospirosis	Number(Percentage)
What is leptospirosis? It is an infectious disease transmitted by rats	250(100%)
How is leptospirosis transmitted? Contact with water contaminated with urine of rats	154(61.6%)
Through rat bite	52(20.8%)
Dont know	40(16%)
What are the symptoms of leptospirosis? Fever	194(77.6%)
Myalgia	104(41.6%)
Jaundice	12(4.8%)
Do not know	12(4.8%)
What are the complications of leptospirosis? Liver failure	28(11.2%)
Renal failure	95(38%)
Do not know	14(5.6%)
Can leptospirosis kill? Yes	64(25.6%)
No	186(74.4%)
What can be done to avoid leptospirosis? Avoiding contact with stagnant water	94(37.6%)
Proper disposal of wastes	128(51.2%)
Prophylactic medicine intake	163(65.2%)
Do not know	15(6%)

Majority of the study participants had received their information through their health worker 139(55.6%).While 83(33.2%)participants mentioned their source of information to be News/ Newspaper, 16(6.4%) and 12(4.8%) participants attributed their knowledge to TV/radio and neighbours respectively.

Practices of study participants regarding leptospirosis

Table 2 shows the practices regarding prevention of leptospirosis at the personal level and household level.

Table 2: Practices of study participants regarding leptospirosis.

Practices regarding leptospirosis	Number(Percentage)
Do you rear cattle/goat? Yes No	 108(43.2%) 142(56.8%)
Swimming, bathing and washing in stagnant water ponds Yes No	 70(28%) 180(72%)
Regularity of washing Immediately after contact At the end of day's work	 171(68.4%) 79(31.6%)
Do you work barefoot? Yes No	 48(19.2%) 202(80.8%)
Frequency of garbage elimination 7 days per week 2-3 days per week 4-5 days per week Once in a week	 92(36.8%) 138(55.2%) 16(6.4%) 4(1.6%)
Working with wounds Yes No	 79(31.6%) 171(68.4%)
Drinking boiled water Yes No	 189(75.6%) 61(24.4%)
Awareness regarding prophylaxis for leptospirosis Yes No	 186(74.4%) 64(25.6%)
Prophylactic medicine intake Yes No	 186(74.4%) 64(25.6%)

The study participants were also interviewed on their practice of intake of prophylactic medicine. 186(74.4%) study participants reported regular prophylactic drug intake. 64(25.6%) participants were not taking prophylactic drug Doxycycline. The most common reason for non-compliance to the drug was experiencing sickness and discomfort on taking the drug.

Factors associated with knowledge about leptospirosis.

Chi-square test was used to assess factors significantly associated with a 'good' level of knowledge regarding leptospirosis. Level of education (p value-0.003) and age (p value-0.001) were found to be associated with the knowledge level of study participants.

Discussion

Knowledge of the signs, symptoms and complications among the MGNREGA workers are indeed crucial because it will help them to recognize the disease manifestations of leptospirosis at an early stage and this may facilitate, early diagnosis, prompt treatment and proper case management to reduce the mortality.[13,14] In a similar study by Prabhu N et al among municipal workers in Tiruchirapalli,86% of individuals had never heard of leptospirosis.[15] Some of the participants in this study had false belief that leptospirosis can be transmitted through rat bites. This wrong belief may spread to other workers as well as the community and may finally contribute to poor disease control.

In the present study, drinking water samples were not analysed and practices were obtained through self-report. Ideally, practices need to be evaluated through observation, which would have increased the internal validity of the study.

Conclusion

Out of the 250 study participants,only103(41.2%) individuals were found to be knowledgeable about leptospirosis. IEC campaign involving interventional awareness programmes for the workers every year before the transmission season would be more effective. Public awareness should be strengthened via newspapers, television and the knowledge of healthcare workers should be strengthened by targeted education. Regular health check ups can be conducted to enable early diagnosis and treatment of leptospirosis and also to ensure compliance to chemoprophylaxis

References

1 Cutler, S.J., Fooks, A.R., van der Poel, W.H.M., 2010. Public health threat of new re-emerging and neglected zoonosis in the industrialized world. Emerg. Infect. Dis. 16(1), 1-7.
2 Ahmad, S.N., Shah, S., Ahmad, F.M.H., 2005. Laboratory diagnosis of leptospirosis. J. Postgrad. Med. 51(3), 195-200.
3 Vijayachari. P., Sugunan, A.P., Sharma, S., Roy, S., Natarajaseenivasan, K., Sehgal, S.C., 2008. Leptospirosis in the Andaman Islands, India. Trans. R. S. Trop. Med. Hyg. 102, 117-122.
4 Ramakrishna, P., Naresh, V.V.S., Chakrapani, B., Venganma, B., Kumar, V.S., 2008. Leptospirosis with acute renal failure and paraparesis. Indian J. Nephrol. 18(3), 130-131
5 Patil, V., Patil, H.V., Sakaria, A., Tryambake, S., 2011. An unusual case of Weil's syndrome with paraparesis. Indian J. Crit. Care Med. 15(2), 130-133
6 DebMandal, M., Mandal, S., Pal, N.K., 2011. Serologic evidence of human leptospirosis in and around Kolkata, India: A clinic-epidemiological study. Asian Pacific J. Trop. Med. 4(12), 1001-1006.
7 Rahim M, Aziah BD, Nazri MS, AzwanyYN,Habsah H, Zahiruddin WM, Zahila I,

RusliMA.Town service workers' knowledge, attitude and practice towards leptospirosis. BrunDarus J Hlth 2012; 5: 1-12.
8 Natarjaseenivasan K, Prabhu N, SelvanayakiK,Raja SSS, Ratnam S. Human leptospirosis in Erode, South India: serology, isolation and characterization of the isolates by randomly amplified polymorphic DNA (RAPD)fingerprinting. Jpn J Infect Dis 2004; 57: 193-197.
9 Kamath R, Swain S, Pattanshetty S, Nair N S. Studying risk factors associated with Human Leptospirosis. J Global Infect Dis 2014;6:3-9
10 Sugunanet al: Risk factors associated with leptospirosisduring an outbreak in Middle Andaman, India. Indian J Med Res 130, July 2009, pp 67-73
11 Vijayanand SM, Jithendran VN. Cited at www.crd.kerala.gov.in (accessed on 25 Aug 2017) Implementation of NREGA experience of Kerala.
12 Rekha Rachel Philip, Indu Ps, Anish Ts, ShrinivasaBm,Teena Mary Joy, Sujina Cm. Occupational And Environmental Risk Factors OfLeptospirosis – A Case Control Study In A TertiaryCare Setting In Kerala, India. Health Sciences 2013;2(1):Js005A
13 Sharma M, Yadav A. Leptospirosis: Epidemiology,Diagnosis, and Control. J Infect Dis AntimicrobAgents 2008; 25: 93-103.
14 Hartskeerl RA. Leptospirosis: current status and future trends. Indian J Med Microbiol 2006; 24:309 -316.
15 Prabhu N, Meera J , Bharanidharan G , Natarajaseenivasan K , Ismail M , Uma A.Knowledge, Attitude and Practice towards Leptospirosis among municipal workers in Tiruchirapalli, India.International Journal of Pharma Research and Health Sciences.Volume 2 (3), 2014, Page:246-254.