Knowledge and Preventive Practices regarding Dengue Fever among Sukumbasi Basti at Lumbini Province, Nepal

Acharya S[1], Acharya S[2], Pandey S[3], Jnawali G[4]
1. Program Coordinator, BSc Nursing, Devdaha Medical College and Research Institute
2. Lecturer, Department of Nursing, TU, IOM Nursing Campus Nepalgunj
3. Lecturer, Department of Nursing, Devdaha College of Science and Technology.
4. Lecturer, Department of Statistics, Butwal Multiple Campus, Tribhuvan University

ABSTRACT

Introduction: Dengue is a mosquito–borne tropical disease which is a major health concern across the globe. There was huge dengue outbreak worldwide in 2016. In Nepal, the first dengue case was reported in 2004 whereas Nepal had experienced a major outbreak of Dengue in several districts in 2010. The purpose of the study is to assess the knowledge and preventive practices of dengue among sukumbasi basti land people at Lumbini Province Rupandehi, Nepal.

Method: A descriptive cross sectional study design was used among 179 adults (aged 18 years and above).

Results: Out of total 179, 72.6% had inadequate knowledge about Dengue fever and more than half 58.1% had inadequate practice regarding prevention of dengue fever. Their knowledge had significant association with age of the respondents in years (p=0.000), educational level (p=0.001), occupation (p=0.007), religion (0.038), marital status (0.037), family history of dengue (0.023). The majorities (58.1%) of respondents did not follow the preventive practices related to Dengue fever. There was a significant association between level of practices with sex of the respondents, education level and occupation.

Conclusion: It can be concluded that majorities of the respondents had inadequate knowledge regarding preventive practices of dengue and more than half of the respondents had inadequate practices regarding dengue prevention.

Keywords: Dengue Fever, Knowledge, Preventive Practices

Introduction

Dengue is an acute infectious disease caused by a flavi virus transmitted by Aedes mosquitoes, and characterized by headache, severe joint pains, and a rash – also called break bone fever or dengue fever.[1] World Health Organization (WHO) classified dengue as: i) Dengue without warning signs, (ii) Dengue with warning signs, and iii) Severe Dengue.[2] Exhibiting symptoms similar to the flu, dengue can progress to severe and life-threatening stages which involves severe bleeding, espiratory and organ impairment.[3] Dengue is associated with significant morbidity, mortality, and economic cost, particularly in developing countries.[4] Dengue virus infection is found in tropical and subtropical regions around the world, and it is increasingly recognized as one of the world's emerging infectious diseases.[5] It is estimated that about 2.5 billion people are at risk for dengue fever and, in recent decades, incidence rate around the world has increased which become an important public health issue.[6]

In Pakistan, more than 300 people died due to Dengue fever in 2011. The prevalence of the disease was over 14,000. There were outbreaks in the Lahore and Punjab. In 2013, in Guangdong, China, there was a 15–fold increase over previous year and 5–fold increase of mosquitoes has left the normally lightly hit region

Correspondence:
Ms. Sarita Acharya
Department of Nursing
Devdaha Medical College and Research Institute, Bhaluhi, Nepal
Email: saritapanthee8@gmail.com
Phone: +977-9844769103

stunned.[7]

In Nepal, first case of dengue was reported in 2004 from Chitwan district.[8] Dengue affected districts are Chitwan, Kanchanpur, Kailali, Banke, Bardiya, Dang, Kapilbastu, Parsa, Rupandehi, Rautahat, Sarlahi, Saptari and Jhapa reflecting the spread of the disease throughout the terai from West to East. In 2011, 79 confirmed cases were reported from 15 districts with, highest number being Chitwan (55).[2] According to Epidemiology and Diseases Control Division (EDCD), 68 patients was found infected with dengue from shrawan 2076 to till 18th Kartik 2076.[9]

Since there is no vaccine available for Dengue prevention, vector control is the ideal method to control Dengue. Vector control methods can be successful only if there is community participation and community-based programs. There exists a gap between the knowledge acquired and the application of knowledge into practices to prevent Dengue. Thus, knowledge of the community about the causes, mode of transmission, signs and symptoms and preventive measures of Dengue is of utmost importance.[10]

The need to review the conduct on community health so as to understand knowledge and practice on dengue and its vectors is due to its increasing prevalence.[11]

During Fiscal year 2074/75, dengue cases were reported from 28 districts. The majority of cases were reported from Rupandehi (32%), Jhapa (25%), Mahottari (20%) and Sarlahi (6%). In addition, there were three confirmed deaths due to Dengue — one each from Chitwan, Jhapa and Arghakhanchi.[12]

Researcher found minimal research on dengue infection in Nepal. More research is imperative to assess the burden of dengue infection in Nepal. So, the objective of the current research was to assess the knowledge and preventive practices on dengue infection.

Method

A descriptive cross-sectional study design was used to conduct study among respondents of sukumbasi basti, Devinagar, Butwal-11 using purposive sampling method. Where all together 128 houses of sukumbasi basti (tharu, pahadi, madhesi) are residing there. One adult member from each household was included based on their willingness to participate. Individuals aged of 18 years and above either the household head or a family member was the study population. People who reported febrile illness and migrated from other places and districts within the past six months were not included in the study. Individuals aged 18 years were interviewed using a structured, pre-tested questionnaire to assess the knowledge and practices.[14,15,17] Informed consent (verbal and written) was taken from all the respondents and confidentiality was ensured throughout the study. Total knowledge score was categorized into two levels, poor knowledge (< 7.5), and good knowledge (> 7.5). Total practice level score was categorized into two levels, poor practice (< 3), and good practice (> 3). The knowledge had been assessed by using the following questionnaire:

1. What is Dengue Fever?
2. What are the causes of dengue?
3. Who are at high risk to Dengue Fever?
4. What is the common clinical manifestation of Dengue Fever?
5. What is the incubation period of Dengue Fever?
6. What are the danger signs of Dengue Fever?
7. When does the Dengue mosquito bite?
8. How is dengue transmitted?
9. Where you think Aides mosquito usually breeds outside the house?
10. Where you think Aides mosquito usually breeds inside the house?
11. How do dengue mosquito and its bite look like?
12. What may be the Complication of Dengue Fever?
13. Why does the bleeding occur in the Dengue fever?
14. What are the Treatment of Dengue fevers?
15. What home remedies can be given in Dengue Fever?

Similarly the practices of the respondents were assessed through face to face interview by using the following structured questionnaire:[14, 15, 17]

1. How do you recognize the person with Dengue fever?
2. What preventive measures can be done to prevent from Dengue Fever?
3. What are the ways to prevent Dengue Fever breeding sites?
4. What can be done to reduce the risk of dengue fever?
5. Waste disposable method
6. Who is responsible for taking the action regarding dengue prevention?

The study was approved by the Institutional Review Board of National Health Research Council, Ramshah path, Kathmandu.

Results

Knowledge scores were found to have significant associations with age of the respondents p=0.000), education level (p=0.001), occupation (p=0.007), marital status (p=0.037), family history of Dengue (p=0.023). However, it was not significant for the sex, religion, and type of family. (Table 3)

Table 1 Socio-demographic Variables

Variables	No.	%
Age in years		
18-35	59	33.0
36-55	69	38.5
55 and above	51	28.5
Total	179	100.0
Sex of the respondents		
Male	86	48.0
Female	93	52.0
Total	179	100.0
Religion of the respondents		
Hindu	93	52.0
Buddhist	40	22.3
Muslim	24	13.4
Christian	22	12.3
Total	179	100.0
Education level		
Illiterate	32	17.9
Read and write but no school	63	35.2
Primary level	37	20.7
Secondary level	30	16.8
Higher secondary and above	17	9.5
Total	179	100.0
Occupation		
Farmer	31	17.3
Service	35	19.6
Government/Private	47	26.3
Business	48	26.8
Others	18	10.1
Total	179	100.0
Marital status		
Single	52	29.8
Married	112	62.6
Widowed	9	5.0
Divorced	6	3.4
Total	179	100.0
Type of family		
Nuclear	70	39.1
Joint	103	57.5
Extended	6	3.4
Total	179	100.0
Family history of dengue		
Yes	63	35.2
No	116	64.8
Total	179	100.0
If yes, who is affected		
None	116	64.8
Father	28	15.6
Mother	35	19.6
Total	179	100.0
Waste management		
Throwing in open areas	37	20.7
Pit and composting	76	42.5
Burning	66	36.9
Total	179	100.0

Table 2: Knowledge level of the respondents

Variables	No.	%
Inadequate	130	72.6%
Adequate	49	27.4%
Total	179	100.0%

Table 3: Association between levels of knowledge of Dengue with demographic variables

Variables	Inadequate No.	Adequate No.	Chi-square Value	df	p-value
Age in years					
18-35	29	30	25.130	2	0.000
36-55	56	13			
55 and above	45	6			
Total	130	49			
Sex of the respondents					
Male	58	28	2.237	1	0.92
Female	72	21			
Total	130	49			
Religion of the respondents					
Hindu	67	26	3.301	3	0.0348
Buddhist	33	7			
Muslim	16	8			
Christian	14	8			
Total	130	49			
Educational level					
Illiterate	24	8	17.882	4	0.001
Read and write but no school	55	8			
Primary level	26	11			
Secondary level	18	12			
Higher secondary and above	7	10			
Total	130	49			
Occupation					
Farmer	22	9	14.242	4	0.007
Service	29	6			
Government/Private	25	22			
Business	38	10			
Others	16	2			
Total	130	49			

Variables	Inadequate No.	Adequate No.	Chi-square Value	df	p-value
Marital status					
Single	31	21	8.488	3	0.037
Married	85	27			
Widowed	8	1			
Divorced	6	0			
Total	130	49			
Type of family					
Nuclear	55	15	2.718	2	0.257
Joint	70	33			
Extended	5	1			
Total	130	49			
Family history of dengue					
Yes	39	24	5.620	1	0.023
No	91	25			
Total	130	49			
If yes, who is affected					
None	116	64.8	6.091	2	0.048
Father	28	15.6			
Mother	35	19.6			
Total	179	100.0			
Waste management					
Throwing, collection	79	26	0.872	1	0.396
Public dustbin	51	23			
Total	130	49			

Table 4: Level of Practice

Practice level	Frequency	Percentage
Inadequate	147	58.1%
Adequate	32	41.9%
Total	179	100.0%

Table 5: Association between Levels of Practice of Dengue with demographic variables

Variables	Inadequate No.	Adequate No.	Chi-square Value	df	p-value
Age in years					
18-35	44	15	3.763	2	0.152
36-55	58	11			Insignificant
55 and above	45	6			
Total	147	32			
Sex of the respondents					
Male	63	23	8.865	1	0.003
Female	84	9			significant
Total	147	32			
Religion of the respondents					
Hindu	73	20	2.550	3	0.466
Buddhist	34	6			Insignificant
Muslim	22	2			
Christian	18	4			
Total	147	32			
Education level					
Illiterate	30	2	25.669	4	0.000
Read and write but no school	60	3			significant
Primary level	25	12			
Secondary level	18	12			
Higher secondary and above	14	3			
Total	147	32			
Occupation					
Farmer	24	7	15.422	4	0.004
Service	30	5			significant
Government/Private	31	16			
Business	45	3			
Others	17	1			
Total	147	32			
Marital status					
Single	39	13	2.639	3	0.451
Married	95	17			Insignificant
Widowed	8	1			
Divorced	5	1			
Total	147	32			
Type of family					
Nuclear	82	21	1.063	2	0.588
Joint	60	10			Insignificant
Extended	5	1			
Total	147	32			
Family history of dengue					
Yes	52	11	0.012	1	1.000
No	95	21			Insignificant
Total	147	32			
If yes, who is affected					
None	89	21	0.374	2	0.829
Father	24	4			Insignificant
Mother	34	7			
Total	147	32			
Waste management					
Throwing in open areas	31	6	0.249	2	0.883
Pit and composting	63	13			Insignificant
Burning	53	13			
Total	147	32			

Practice scores were found to have significant associations with sex of the respondents (p=0.003), educational level (p=0.000) and occupation (p=0.004). However, the associations for the age, religion, marital status, family history, and type of family and waste management system were not significant (Table 5).

Discussion

Education status and knowledge regarding disease play a vital role in the health behaviour of people. This data reveals most of the respondents could read and write only but had no formal education so they were unaware of

Dengue and its consequences. The majority (35.2%) of respondents could read and write but no school education, 20.7% had completed primary level of education, 16.8% had completed secondary level, 9.5% had completed higher secondary and above, and remaining 17.9% were illiterate (Table 3) but according to annual report of Department of Health services (DOHS) Nepal (2074/75) the adult literacy rate of Nepal was 67.9%. It increased from 20.6% in 1981 to 67.9% in 2018.[12]

The majorities (72.6%) of respondents had inadequate knowledge, whereas only 27.4% had adequate knowledge regarding Dengue fever (Table 3). The finding of the study is supported by the study conducted in highland and lowland communities in central Nepal shows, out of 589 individuals interviewed, 77% had heard of Dengue fever and only 12% of the sample had good knowledge of DF.[14]

Regarding the preventive practice of the dengue, 58.1% of the respondents had inadequate level of practice. Similar result was observed in the study conducted at central Nepal and only 21.2% had sufficient preventive practices.[15]

The study revealed that, there was a significant association between age (0.000), religion (0.0348), educational level (0.001), occupation (0.037), and family history with dengue with level of knowledge regarding preventive practice of dengue (Table 5). The study result is concordance with the study conducted among people visiting the state run Civil Hospital (CHK) and Aga Khan University Hospital (AKUH), two major tertiary care facilities in Karachi, during the period November – December 2006. Significant associations were found between knowledge scores and education (Table5); (<0.001), income (<0.001).[16]

The study revealed that there was a significant association between level of practice with sex of the respondents (0.003), education (.000) and occupation (0.004).

Conclusion

The result showed the positive correlation between knowledge and practice among respondents which implies majority of them have inadequate knowledge and practice about dengue fever and its prevention.

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Conflict of interest: None

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