

Knowledge and Preventive Practices on Dengue Fever among Community People in Janakpurdham, Nepal

Smita Pandey^{1*}, Punita Yadav², Srijana Mahato², Laxmi Dahal³

¹Lecturer, Department of Community Health Nursing, Madhesh Institute of Health Sciences, Jankpurdham

²Lecturer, Department of Maternal Health Nursing, Madhesh Institute of Health Sciences, Jankpurdham

³Assistant Professor, Department of Child Health Nursing, Biratnagar Nursing Campus, TU IOM

*Corresponding Author: Smita Pandey, smitapandey661@gmail.com

ABSTRACT

Background: Dengue is a viral infection transmitted to humans through the bite of infected mosquitoes and is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas. According to the Epidemiology and Disease Control Division (EDCD) of the Ministry of Health and Population, Dengue is endemic in Nepal. Dengue is caused by a virus that is mostly transmitted by the bite of female mosquitoes of the species *Aedes aegypti*. This study aims to assess the knowledge and preventive practices regarding dengue fever among community people in Jankpurdham.

Methodology: A Descriptive cross-sectional research design was conducted in ward no 14 of Janakpurdham sub-metropolitan city of Dhanusha, and samples were selected using the purposive sampling method. A total of 156 samples with an age range of 18 to 60 years were interviewed using the structured questionnaire. Data was analyzed using SPSS version 11.5. Descriptive statistics were used to describe socio-demographic data. The chi-square test was used to find out the association between dependent and independent variables.

Results: According to findings of the study, the Mean \pm SD of age was (39 \pm 10.99). Around 55.1% (86) were male, and 44.9% (70) were female. Thus, giving a male-to-female ratio of 7:6. Nearly half of the subjects (41.73%) were illiterate. Regarding occupational status, most of the respondents were found. The majority of the respondents (78.8%) had poor knowledge regarding dengue fever. This study reveals that good practice was found to be (51.5%) and poor practice (40.8%). The mean and standard deviation for the level of practice were 1.4423 and 0.49, respectively.

Conclusion: The respondents' knowledge regarding dengue fever was poor. There was no significant difference between the level of knowledge and age, gender, family income and occupational status of the respondents. Religion, which is more significant with the level of knowledge, is seen as a deficit in preventive practices of dengue fever. More than half of the respondents had good preventive practices against dengue fever.

Keywords: Dengue, Knowledge, Preventive Practices

INTRODUCTION

Dengue is a viral infection transmitted to humans through the bite of infected mosquitoes and is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas. According to the Epidemiology and Disease Control Division (EDCD) of the Ministry of Health and Population, Dengue is endemic in Nepal. The country is experiencing a surge in cases that started from the week commencing 8 August to 26 August. Between

January and 28 September 2022, a total of 28 109 confirmed and suspected dengue cases and 38 confirmed deaths due to dengue have been recorded, affecting all seven provinces. The highest number of new cases in 2022 has been reported in the districts of Kathmandu (n=9528; 33.8%), Lalitpur (n=6548; 23.2%), and Makwanpur (n=2776, 9.8%).¹A small proportion of people develop severe dengue, which can be fatal. There are four closely related dengue viruses, which are called dengue serotypes.²

The World Health Organization (WHO) has ranked dengue as one of the top ten threats to Global health in 2019. Brady et al. estimate a 3.9 billion prevalence of people, accounting to 40%-50% of the world's population being at risk of infection. 128 countries worldwide are at risk of dengue infection, of which 70% of the global burden is in Asia.³

There is limited information available on dengue viral infection in Nepal. In Nepal, the first case of dengue was reported in 2004 from Chitwan district.²⁰ Sporadic cases were reported since the 1990s in a Japanese traveller who visited Nepal and developed DF after returning to Japan. Outbreak of Dengue occurred in Nepal in 2006.⁴

There is no vaccine to prevent human infection by this virus. Personnel protection and the environmental management of mosquitoes are important in preventing illness. Prevention is the most important step, and prevention means avoiding mosquito bites. The best way to reduce mosquitoes is to eliminate the places where the mosquito lays its eggs, like artificial containers that hold water in and around the home.⁵

The dengue infection has become a major global public health problem, and 40% of the world's population lives in an area at risk for dengue, causing nearly 400 million infections every year. There is no specific treatment for dengue, but if there is proper case management, then case fatality rates can be below 1%.⁶

While several KAP studies have been conducted in Nepal, these were limited to specific dengue-endemic areas or only focused on dengue-infected people. Furthermore, limited previous studies were conducted on dengue fever in Janakpurdhm Sub-metropolitan City. People have inadequate knowledge about dengue and its preventive methods. They need more understanding of dengue fever.⁷

Since dengue is also increasing globally and nationally, this research may help to assess how knowledgeable people are regarding dengue and how well they apply preventive practices to prevent dengue fever. So, the research and findings may help to design various programs, policies and also help for further research for the effective prevention and control of dengue globally and nationally.

METHODOLOGY

A Descriptive cross-sectional research design was conducted in ward no 14 of Janakpurdhm sub-metropolitan city of Dhanusha, and samples were selected using the purposive sampling technique. The target population of the study is individuals of household of age 18-60 years old living in the selected ward of Janakpurdhm Sub-Metropolitan City. Individuals of a household of age 18-60 years old living in the selected ward number of Janakpurdhm meeting the inclusion criteria was sample of the study. The sample size was calculated on the basis of a previous literature review. A total of 156 samples with an age range of 18 to 60 years were interviewed using the structured questionnaire. Individuals of the household aged between 18 and 60 years old were chosen, and mentally stable members capable of answering were chosen. Participants absent at the time of data collection and who had not given consent for participation in the survey were not included in the survey. A closed-ended structured interview questionnaire was used to collect data from the chosen residences. It consists of two sections: knowledge and preventive practice of dengue fever. The duration of data collection was one and a half months.

Ethical principles were followed throughout the study. The ethical approval was taken from NHRC. Informed verbal as well as written consent was obtained from each participant before enrolling them in the study. Privacy and confidentiality of the participant were maintained. Permission was taken from the health sector division under the sub-metropolitan city of Janakpurdhm. Participants meeting the inclusion criteria were enrolled in data collection. Data was collected after getting the ethical clearance from the Ethical Review Committee of NHRC with ERB No:108.

After data collection, the data were checked for completeness and stored properly for further analysis. A serial number was given to each participant. Collected data was entered into Microsoft Excel 2007 and converted into SPSS 24 for statistical analysis. 50% Cut off score was used for the level of knowledge and the level of practice. For descriptive statistics, percentage, mean and standard deviation were calculated along with graphical and tabular

forms. For inferential statistics, the chi-square test was used to find out the significant association between dependent and independent variables at 95% confidence Interval and 5% level of significance.

RESULTS

Table 1: Socio-demographic characteristics of respondents

n=156

Characteristics	Number (n=156)	Percentage
Age		
19-39	62	39.7
40-60	94	60.3
Mean=39.8andSD= ±10.99		
Gender		
Male	86	55.1
Female	70	44.9
Religion		
Hindu	139	89.1
Others	17	10.9
Ethnicity		
Madheshi	125	80.1
Others	31	19.9
Educational status		
Illiterate	65	41.7
Primary education	63	40.4
secondary education	23	14.7
Graduation and above	5	3.2
Occupational status		
Agriculture	23	14.7
Services	30	19.2
Business	24	15.4
Daily wages	54	34.6
Housewives	25	16.0
Family Income		
< or=30000	102	65.4
>30000	54	34.6
Type of Family		
Nuclear	95	60.1
Joint	61	36.1

Table 1. Illustrates that (60.3%) of respondents were from the age group 40-60years and the least were from the age group 19-39years, more than half of the respondents were male (55.1%), whereas males constituted (44.2%). The majority of the respondents were Hindus (89.1%), and almost (801%) belong to Madheshi. Nearby, half of the participants had primary level education (58.3%) followed by secondary education (14.7%), and graduation and above is the least (3.2%), and the majority were illiterate (41.7%). Regarding occupational status, around 1/3rd of the respondents was engaged in daily

wages (34.6%). Regarding economic class (65.4%) had a monthly income of >30000. The majority of the respondents belong to (60.1%) nuclear family.

TABLE 2: Level of Knowledge regarding dengue fever (n=156)

Level of Knowledge	Frequency (%)	Mean	SD
Good Knowledge	33(21.2)	1.7885	.40971

Table 2: Illustrates the level of knowledge categorized based on the cut-off score, good Knowledge (50% or more), and poor Knowledge (below 50%). The findings showed that the majority of the respondents (78.8%) had poor knowledge regarding dengue fever. The mean and standard deviation for the level of knowledge are 1.7885 and 0.40971, respectively.

TABLE 3: Level of preventive practices regarding dengue fever (n=156)

Level of practice	Frequency (%)	Mean	SD
Good Practice	87(51.5)	1.4423	.49826
Poor Practice	69(40.8)		

Preventive practices are categorised based on the cut-off score: Good Practice (50% or more) and Poor Practice (below 50%) based on previous literature review. Table 3: Illustrates that good practice was found to be (51.5%) and poor practice (40.8%). The mean and standard deviation for the level of practice were 1.4423 and 0.49, respectively.

TABLE 4: Association of level of Knowledge and preventive practices regarding dengue fever with various Socio-demographic variables (n=156)

Characterstics	Knowledge regarding dengue fever			Preventive Practices of dengue fever		
	Good n (%)	Poor n (%)	P Value	Good Practices n (%)	Poor Practices n (%)	P value
Age						
19-39	14(8.9)	48 (30.7)	0.43	35(22.47)	27(17.30)	0.511
40-60	19(12.33)	75(48.07)		52(33.33)	42(26.9)	
Gender						
Male	21(13.6)	65(41.6)	0.182	53(33.9)	33(21.2)	0.71
Female	12(7.6)	58(37.2)		34(21.8)	36(23.1)	
Religion						
Hindu	25(16.02)	117(75)	0.002	78(50.0)	64(41.04)	0.352
Others	8(5.1)	6((3.8)		9(5.76)	5(3.2)	
Ethnicity						
Madheshi	26(16.6)	99 (63.5)	0.500	71(45.5)	54(34.61)	0.374
Others	7(4.5)	24(15.4)		16(10.27)	15(9.9)	
Family Income						
≤30000NPR	18(11.53)	84(53.87)	0.103	55(35.0)	47(30.0)	0.320
>30000NPR	15(9.6)	39(25)		32(20.9)	22(14.1)	
Occupational Status			0.121			0.024
Daily Wages	15(9.6)	40(25.6)		37(23.7)	18(11.53)	
Others	18(11.53)	83(53.2)		50(32.05)	51(32.7)	
Educational Status			0.035			0.007
Illiterate	32	103		81	54	
Literate	1	20		6	15	

P-value based on chi-square test, $P < 0.05$ is considered statistically significant

Table 4 depicts the association of the level of knowledge and preventive practices regarding dengue fever with various socio-demographic variables.

The above table clearly shows there is no significant association of level of knowledge with Age, gender, ethnicity, occupational status, and family income. Whereas religion and educational status show a significant association with the level of knowledge. There is a significant association between occupational status and educational status with level of practice. Whereas age, gender, ethnicity, family income, and religion is statistically not significant with level of practice.

DISCUSSION

The results showed majority of respondents 94(60.3%) were between (40-60) age group and the mean age of respondents is 39 and $SD = \pm 10.99$ which is similar to study done by Sanjeev Kumar Shah, National Open College, Pokhara University in which majority of respondents(81%) were between age group (40-60) In the present study, the population proportions of male and female were 55.1% and 44.9% respectively, which is similar to Sanjeev Kumar Shah, National Open College, Pokhara University where males were 53.02% and females were 44.9% respectively¹. The proportion of males higher as compared to that of females. The reason might be that in the Nepalese society many females are involved in household works.⁸

Majority of the respondents (89.1%) of the people are Hindu. The reason might be due to fact that around 82% of the people are Hindu in Nepal according to the Central Bureau of statistics 2011 AD. It is also similar to the study of Janaki Medical College, Nepal as 98.8% belong to hindu.⁹

In the present study majority of the respondents (78.8%) had poor knowledge regarding dengue fever, which is contrary which is just contrary to a previous study done by Raju Khanal Centre Department of Health Education, Tribhuvan University, Kirtipur, Kathmandu, Nepal, in which more than half of the respondents had good knowledge regarding dengue fever. Good practice was found to be (51.5%), which

is similar to a previous study in which 61% of the respondents had good preventive practices.¹⁰

The result clearly shows there is a significant association of level of practice with educational status of the respondent, with p-value 0.035, which is similar to the study done by Naresh Kumar Sah, Department of Public Health, Oasis Medical College Teaching Hospital and Research Centre, Bharatpur-10, Nepal, with p-value < 0 .¹¹

In this study, it was found that there was no association between knowledge and age of the respondent, which states that knowledge of dengue does not significantly differ by age ($P > 0.05$). This finding was similar to the study conducted in Purbanchal University School of Health Sciences, with ($p = 0.924$).¹²

We found a significantly positive correlation between the knowledge and educational status of respondents' practice ($P < 0.001$). which is just contrary to a cross-sectional survey of knowledge, attitude, and Practice: Journal of Family Medicine and Primary Care, in which ($P > 0.05$), and education level.¹³

CONCLUSION

The respondents' knowledge regarding dengue fever was poor. There was no significant difference between the level of knowledge and age, gender, family income and occupational status of the respondents. Religion, which is more significant with the level of knowledge, is seen deficit in preventive practices of dengue fever. More than half of the respondents had good preventive practices against dengue fever. The findings from this study showed that the majority of the respondents had poor knowledge regarding dengue fever. Therefore, conducting awareness programmes, developing guidelines and educational material regarding dengue fever is highly recommended. A larger-scale study needs to be done to determine the knowledge and preventive practices regarding dengue fever and associated factors.

Conflict of Interest

No conflict of interest

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