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Awareness and Preventive Measure on Dengue Fever among Community People in Kathmandu

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ABSTRACT

Introduction: More than one-third of the worldwide populations are affected by dengue fever. It is a public health problem. The objective of this study is to find out the awareness and preventive measure on dengue fever.

Method: A Descriptive Cross-sectional research design was adopted to collect the data from 346 people by non-probability purposive sampling technique. A semi-structured questioner was developed based on intensive literature reviewed. The investigator herself after the approval of the IRC (Institutional review committee) TUIOM collected data. Before data collection, formal permission was obtained from the ward office of Chandragiri municipality-5. Written consent was obtained from each individual sampling unit before interview and observation. The findings were described in descriptive statistics.

Result: All most all (95.4%) respondents were heard about dengue fever. All respondents answered dengue can be prevention, but 40.17% respondents were known it is viral infection, 29.19% belief it is communicable diseases transmitted by mosquito (48%), but the specific types of mosquito (Aedes aegypti), known only 36.7% of respondents. Majority of respondents (84.39%) known it is transmitted by mosquito to human being and below half (47.68%) of respondents known this type of mosquito is breeding in clean stagnation water and bite in day and dusk 67.63%. All most all respondents known about signs and symptoms of the dengue high fever (98.84%), headache (74.85), body ache (62.71%), retro orbital pain (36%), easily bleeding (32.26%) flushing (26.58%), sore throat (23.12 %), skin erythema (16.18%), and photophobia (15.89%), are early signs of dengue infection. Sixty-three percent respondents know the vomiting is late signs of dengue infection, lethargy (43.35 %), blood disorder (35.54%), weakness (30.92%), shock (22.54 %), and bleeding (21.38%), are late signs of dengue infection. Only 46.82% respondents know management of dengue infection, Below half (44.8%) respondents' answered its prognosis is good, majority of respondents known about complication of dengue is bleeding and shock and 19% respondents known vaccine is not availed of dengue infection till date. In mosquito controls measures, highest number of respondents (66.5%) were aware on environment sanitation can

control the mosquito; all most all respondents were aware on mosquito control is the only one solution of the dengue control.
Conclusion: The awareness regarding dengue in the study participants are not sufficient and preventive practices are not satisfactory. Improvement of prevention practices for dengue transmission must be emphasized.

KEYWORDS
Dengue fever, Preventive measure, Chandragiri Municipality

INTRODUCTION
Dengue is an acute infectious disease caused by dengue virus and transmitted by the *Aedes* species of mosquito. In Nepal, dengue is a rapidly emerging disease. Endemic across most provinces, dengue incidence has increased in recent years largely due to expansion of the vector *Aedes aegypti* and *Aedes albopictus,* as well as the movement of people and the introduction of imported cases. The first case of dengue was reported in 2004. In 2006, large number of probable cases and 32 laboratory-confirmed cases were reported across hospitals in central and western Terai, as well as Kathmandu during the post monsoon season (MOH, 2019). This trend for increased continued with number of outbreaks reported each year in many districts- Chitwan, Jhapa, Parsa (2012-2013), Jhapa, Chitwan (2015-2016), Rupandehi, Jhapa, Mahottari (2017), Kaski (2018) and Sunsari (2019). September 2019 this problems is outbreak in 42 districts, suffer 4962 people (Pokharel, 2019).

METHOD
A descriptive Cross-sectional research design was used to find out awareness and preventive measure on dengue fever. This study was carried out among people living in Chandagiri ward no 5. Each household was selected one family member only while available in the house during data collection. The sample size was 385. Non-probability purposive sampling technique was used. Semi-structured questioners were developed based on intensive literature reviewed to obtain necessary information. The research instrument was divided in three distinct parts: Part I consisted of questions related to socio-demographic information, part II consist of questions related to awareness and part III consist checklist related to preventive measure used on mosquito breeding and bite. For preventive measure observation, check list and questions were asked. Total question regarding awareness was 38. Each response of the multiple choice questions carried one mark and closed ended questions carried one mark. For the preventive measure checklist was used, it includes 12 questions. Data collection period was 3 weeks (4 – 23 March 2020) by investigator herself, after approval of the institutional review Board, Tribhuvan University, institute of Medicine. Before data collection, formal permission was obtained from the ward office of Chandragiri municipality ward no 5. Then after written consent was, obtain from each respondent. The researcher visited in the community, explained the objectives and procedure of the study to the people, requested time of the respondents, and explained to the participant their participation of the study was voluntary and written consent was obtained. Respondents were interviewed by using Nepali version interview schedule. Precaution was taken throughout the study in every step to safeguard the right and welfare of all respondents in the study. Respondents were given to liberty to discontinuous participation in any time from the study if they would like. Participants were

ensured that their confidentiality and privacy would be maintained. Obtained information would be used for research purpose only. The average time require to interview was 15 – 20 minutes. Only one person was interview in a household while data collection. If there is more than one person during data, collection adult head of the family member was interview, who meets the inclusion criteria. The obtained data was analyzed and interpreted according to the objectives of the study and research question. Then data were edited, coded, entered and analyzed by using statistical package for social science (SPSS) version 16. Frequency distribution and percentage of all relevant variables were presented in table; relevant mean and standard deviation were calculated.

RESULT

Table 1: Socio-Demographic Characteristics of Respondents

n=346

Characteristics	Number	Percent
Age of respondents		
16 to 25	73	21.09
26 to 35	139	40.17
36 to 45	86	24.85
46 to 55 and above (mean 35.47, SD±14.79)	48	13.87
Sex		
Male	216	62.4
Female	130	37.6
Ethnicity		
Upper cast	222	64.2
Advantage janajati	109	31.5
Disadvantage janajati	7	2
Dalit terai	5	1.4
Dalit	3	0.9
Education status		
Unable to read and write	21	6.06
Primary level	42	12.13
Secondary level	96	27.74
Higher Secondary level	128	36.99
Bachelor level	59	17.05
Occupation		
Homemaker	177	51.2
Service	94	27.2
Business	25	7.2
Other (Daily wage earner, skill labor, Retired)	50	14.5
Economic status		
Sufficient for 3month	63	18.2
Sufficient for3- 6 month	39	11.3
Sufficient for 6- 12month and surplus	244	70.5

Table 1 depict that Majority of respondents (40. 17%) were from 26 to 35 years of age group mean age (35.47 and SD ±14.79). Highest numbers of respondents were male (62.4%) and similarly higher percent of respondents were fall in upper cast ethnicity. Higher numbers of respondents were fall on higher secondary level education status. More than half of respondents (51.2%) were homemaker and highest percent of respondents' economic status was sufficient to meet a year and surplus.

Table 2: Awareness of respondents on Dengue fever

	n=346	
Variables	**Number**	**Percent**
Dengue is Virus infection	139	40.17
Transmission by(*aedes)* mosquito	127	36.7
Breeding place of mosquito *(aedes)* Clean stagnation water	165	47.68
Early signs & symptoms of dengue fever*		
High fiver	342	98.84
Headache	259	74.85
Body ache	217	62.71
Retro orbital pain	125	36.12
Easily bleeding	112	32.36
Facial flushing	92	26.58
Sore throat	80	23.12
Skin Erythma	56	16.18
Photophobia	55	15.89
Late signs & symptoms of dengue fever*		
Vomiting	218	63
Lethargic	150	43.35
Blood disorder	123	35.54
Weakness	107	30.92
Shock	78	22.54
Bleeding	74	21.38

Table 2 show that below half of respondents (40.17%) were known about dengue fever are viral infection, below one-third (29.19%) belief it is communicable diseases. All most all (98.84%) respondents were known about the high fever is the early sign of dengue infection and 74.85% and 62.71% were known about headache and body ache respectively. Thirty-six percent known as retro orbital pain, 32.26% known easily bleeding is the sing of dengue infection. Below one forth percent of respondents know flushing, sore throat, skin erythema and photophobia is early signs of dengue infection. Sixty three percent respondents know the vomiting is late signs of dengue infection, below half of the respondents were known lethargy, blood disorder, weakness, bleeding and shock are late signs of dengue infection.

Table 3: Respondents' level of awareness on Dengue Fever

Level of awareness	Number	Percent
Adequate (≥ 13)	155	44.8
Inadequate (<13)	191	55.2
Total	346	100.0

Mid value =13

Table 3 depicts that more than half (55.2%) of the respondents had inadequate level of awareness on dengue fever which was followed by adequate level of awareness 44.8% of respondents.

Table 4: Preventive measure used on mosquito bite and breeding

n=346

Variables	Number	Percent
Prevention measure applied for mosquito bite*		
Bed net	262	75.72
Stay in room at evening	233	67.34
Screen door/window	187	54.04
Mosquito coil	172	49.71
Use full slip cloths	103	29.76
Use smoke	100	28.9
Fan	66	19.07
Use of mosquito replicates	59	17.05
Prevention measure use for mosquito breeding*		
Clean surrounding	297	85.83
Covering water storage pots	246	71.09
Avoid stagnant water	246	71.09
Used insecticide	93	26.87
Change of water in container	23	6.64

* Multiple responses

Table 4 depict the preventive measure used by the respondents to prevent from the dengue infection. Higher number on respondents (75.72%) were used bed net to prevent from mosquito bite, more than two third of the respondent(67.34%) were answered stay at home in evening time while mosquito were active and 54.04% of respondents were used screen in window and doors. Below half of the respondents were used mosquito coli, 29.76% and 28.9% respondents used full slip cloth and use of smoke respectively. Some of them used fan and mosquito replicate too. Majority of the respondents were kept surrounding clean and 71.09% were avoidance stagnancy of water around residence; some of them (26.87%) used insecticide spray and powder around the home. Higher number of respondents covered the water storage pots in their home. Only few respondents' practices changes of water regularly in container like flower vase etc.

Table 5: Respondents' level of practice on Dengue Prevention

Level of practices	Number	Percent
Good (≥6)	207	59.8
Poor (<6)	139	40.2
Total	346	100.0

Mid value =6

Table 5 reveals that above half (59.8%) of respondents' level of practices on dengue prevention was found good and 40.2% of respondents had found poor practices level.

Table 6: Association between level of Practices on DF and socio-demographic variables

n=346

Variables	Practices level		X^2	*P* value
	Good No. (%)	Poor No. (%)		
Age in years				
< 36	140	76	5.952	**.010**
≥36	67	63		
Sex				
Female	120	96	4.363	**.024**
Male	87	43		
Occupation				
Home maker & Other	150	75	12.457	**.000**
Business & service	56	63		
Economic status				
Enough up to 6 month	59	43	.237	.356
Enough12 month and surplus	148	96		
Feeling of risk of infection				
Low risk	45	73	1.958	.376
High risk	21	21		
Severity of the infection				
Less severe	71	14	26.340	**.000**
More severe	136	125		

P value significance at <0.05 level of significance

Table 6 shows that the association of level of practices with age, sex. Occupation of respondents and feeling severity of the infection were found significant as the *p* value < 0.05 whereas the association of practice level on DF with economic status and filling of risk of infection of respondents were observed insignificant as *p* value >0.05.

Table 7: Association between level of awareness and level of practice on DF

Variables	Level of practices			
Level of awareness	**Good(≥6)**	**Poor (<6)**	X^2	***P* value**
Adequate (≥13)	97	58	0.88	0.203
Inadequate (<13)	110	81		
Total	207	139		

Table 7 demonstrated the association between level of awareness on DF and the level of practices on DF was found insignificance as the *p* value >0.05.

DISCUSSION

Highest number of respondents (66.5%) were aware on environment sanitation can control the mosquito; all most all respondents were aware on mosquito control is the only one solution of the dengue control. In contrast, a study finding shows that, 27.14% respondents stated, as it is government responsibility to give protection against mosquito bite and dengue fever (Shaheenet al., 2018*)*. It may be different setting of the study that study was conducted in Kalaburagi district at hospital setting but present study conducted in community setting. All respondents answered it can be prevented. The higher number on respondents (75.72%) were used bed net but in contrast a study result show 33.33% as bed nets to prevent from mosquito bite (Shaheen S et al.2018), more than two third of the respondent (67.34%) were answered stay at home at the evening time while mosquito were active and 54.04% of respondents were used screen in window and doors. Below half of the respondents were used mosquito coli, 29.76% and 28.9% respondents used full sleeves cloth and use of smoke respectively. Some of the also used fan and mosquito replicate too. This finding is also supported a study conduct in Morong district by K.C., 2016 and Shaheen. et. al., 2018. In present study majority of the respondents were kept surrounding clean and 71.09% were avoidance stagnancy of water around residence; some of them (26.87%) used insecticide spray and powder around the home. Higher number of respondents covered the water storage pots in their home. Only few respondents' practices changes of water in container like flower vase etc. This finding also supported by a study conducted in India by (Malhotra, 2014, Matta, 2006, Begonia, 2014, and Nijhawan, 2018).

Most of the respondents were aware of measures to be taken to protect themselves against mosquito bites. However, there is a practical implication in using mosquito nets in which the most popular means to prevent dengue fever, as the mosquito bites occur during daytime. Therefore, there is a discrepancy between the population's knowledge of biting habits of the mosquito and the practice to prevent it bites. This finding id supported by a study conducted by Dhimal, 2014, Syed, 2010).

Higher percentage (83.8%) of population believes cleaning the environment at least once a week to eliminate water collecting areas may prevent dengue. Even though the study population was well-educated 93.54%% had a knowledge regarding dengue. Majority of study population believed that dengue prognosis is good (44.8%) and can be preventable (100%). This is compatible with a similar study done in other pare of Nepal. However, a similar study conducted in Malaysia 57% respondents stated that it is the sole responsibility of public to adhere the prevention strategies (Hairi, 2003).

The findings reveal that above half (59.8%) of respondents' level of practices on dengue, prevention was found good and 40.2% of respondents had found poor practices level. In present study the association of level of practices with age, sex, occupation of respondents and feeling severity of the infection were found significant as the *p* value < 0.05 whereas the association of practice level on DF with economic status and filling of risk of infection of respondents were observed insignificant as *p* value >0.05. This finding also supported by a study conducted by Elsinga, 2018, Tikoo, 2016 and Shaheen, 2018.

CONCLUSION

Awareness on preventive measures are found low but the practice is found on mosquito prevention is good. For awareness, health campaigns can be organized to disperse such information. It will be better to disseminate through electronic and print media, which can reach to a wider population.

LIMITATION

The limitation of this study was non-probability and secondly the observation on their preventive measures would not be practicable that is wearing full sleeves, use of fan, mosquito replicates etc. The present situation of COVID 19, researcher faced the problems in data collection and consultation.

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