International Journal of Preventive Medicine Research
Vol. 2, No. 2, 2016, pp. 8-12
http://www.aiscience.org/journal/ijpmr
ISSN: 2381-7038 (Print); ISSN: 2381-7046 (Online)

Knowledge, Attitudes and Preventive Practices of House Hold Regarding Dengue Fever in the Rural Areas of Jazan Region, Saudi Arabia

Tahani B. ELyas[1, *], Ebtihag M. ELsidig[1], Abrar Aseri[2], Awsaf Break[2], Halima Salim[2], Rania Adil[2], Rafef Hamoud[2]

[1]Faculty of Public Health and Tropical Medicine, Jazan University, Jazan, Saudi Arabia
[2]Faculty of Public Health and Tropical Medicine, Department of Health Education Jazan University, Jazan, Saudi Arabia

Abstract

This is a descriptive cross-sectional study was conducted in rural areas of Jazan region during June 2015- March 2016. The objective is to assess the knowledge, attitudes and practices (KAP) of the households 'caretakers regarding dengue fever. A sample of 384 households' care-takers was randomly selected. Data was collected by using a structured pre-code questionnaire. The questionnaire consist of five sections, information about socio-demographic profile of households' caretakers, previous knowledge about transmission, symptoms & signs and prevention methods of dengue fever. The study shows that (74.0%) of care-takers have good knowledge about dengue fever, (35.0%) mention that they know dengue fever through radio and newspaper were the main source of information, (37.0%) revealed that fever is most common symptoms, (28.0%) reported that mosquito feeding-time usually took place during the daytime. Also, the study indicates that there is an association between knowledge of household with both attitudes and practices about dengue fever. The study recommends that the increasing the care-taker awareness about dengue fever prevention. Besides, the implementation of a continuous KAP assessment.

Keywords

Dengue Fever, Knowledge, Attitudes, Practices, Household, Jazan, Saudi Arabia

Received: May 19, 2016 / Accepted: May 30, 2016 / Published online: June 17, 2016

1. Introduction

Dengue fever (DF) is a viral infection, transmitted by bites of Aedes aegypti and Aedes albopictus mosquito. There are four antigenically distinct dengue virus serotypes ((DEN 1, DEN 2, DEN 3, and DEN4) [1, 2, 3, 4]. Dengue presents as a spectrum of increasingly severe clinical manifestations, ranging from classic DF to dengue haemorrhagic fever (DHF) to the most severe form, dengue shock syndrome (DSS) [1]. DF has recently re-emerged globally as the most important arboviral diseases [1] and is now one of the world's major infectious diseases [5]. DF is a major cause of morbidity in tropical and subtropical regions of the world [6]. Yearly, an estimated 50—100 million cases of DF and 250,000—500,000 cases of DHF occur worldwide [7].

In Saudi Arabia, the dengue virus was first detected in Jeddah in 1994, since that the disease becomes endemic in many cities of Saudi Arabia like Jeddah, Mecca, Medina and jazan. Due to the population growth, urbanization and climatic condition [8]. Binsaeed, et al [9] conducted a study to investigate knowledge, attitudes and practices relating to dengue fever among females in Jazan high schools. They concluded that prevalence of sufficient knowledge was Low.

Alhazm, et al [10] conducted a study to assess the Knowledge, attitudes, and practices relating to dengue fever

* Corresponding author
E-mail address: Thani.babiker@yahoo.com (T. B. ELyas)

among high school students in Makkah. The result showed that knowledge about DF was deficient; 59%, 32.7%, and 8.3% of the students obtained poor, fair, and satisfactory knowledge scores, respectively.

Multiple survey in different countries indicate that the highest prevalence rate found in rural areas and human behavior & their attitudes are associated with spread of dengue fever [9] [11]. The main objective of this study was to assess the level of knowledge, attitudes, and practices of households toward dengue fever.

2. Methodology

2.1. Study Design

This is a descriptive cross-sectional study was conducted between June 2015 to March 2016 about knowledge, Attitudes and practices of dengue fever among the household in the rural areas of Jazan region.

2.2. Study Area

Jazan is a port city and the capital of Jazan Region. It is located in the southwest corner of Saudi Arabia and directly to the north of the border with Yemen. Jazan city is situated on the coast of the Red Sea and serves a large agricultural and the total population is estimated at about 1.500 million.

2.3. Study Population

Households' care-takers irrespective of their sex and who was present at the time of the visit was the study unit.

2.4. Inclusion Criteria

Households' care-takers who is residing in the area for at least one year and those were willing to participate in the study were included. All medical personnel, including doctors, nurses and medical students were excluded from the study

2.5. Sample Size

The sample size was calculated by using an anticipated population proportion of 50% knowledge and attitudes prevalence and with an absolute precision of 5% at 95% confidence; the sample was calculated as 384 representative sample of the population of the rural. 16 villages were randomly selected by using a simple random sample and 24 households were then drawn from each village.

2.6. Data Collection

Data was collected by structured questionnaire, the questionnaire consist of 20 questions given to the household, which includes social, demographic data, knowledge about the mode of transmission, attitudes and behavior practices toward dengue preventive and information about the main sources of dengue fever.

2.7. Data Analysis

Data was analyzed by using the statistical package for social sciences programs (SPSS), and then results were presented in tables and figures. Chi-square test was used for testing associations. KAPS were assessed using a scoring system. Questions were given one (1 for yes/ correct answers) and zero (and 0 for no/incorrect answers). The scores were added to arrive at a single value out of a possible total score. seven for knowledge, five for attitudes, and five for practices. KAPS were assessed as satisfactory or unsatisfactory. Respondents who scored 5 out of 7 in knowledge, 3 out of 5 in attitudes, 3 out of 5 in practices assesses as 70% and considered as satisfactory.

2.8. Ethical Consideration

Ethical approval was obtained from the Public Health Research Ethics Committee of Faculty of Public Health. Participation was voluntary and verbal consent was acquired from all participants. Confidentiality of all participants was maintained as no names were mentioned in the questionnaires.

3. Results

3.1. Socio-Demographic Characteristic of Household

A total of 384 households were interviewed, the result indicates that 66% of household were female, about 53% of them were in the age group 15–30 years, 33% at the university level and 53% of them were housewives (Table 1).

3.2. Knowledge and Practices About Dengue Fever and Preventive Measures

Tables 2 and 3 shows that the respondents' knowledge, attitudes about dengue fever, its transmission, and preventive measures. In total 367/384 household had heard about dengue fever. 74% mention that dengue fever was transmitted through mosquito bites and only 28% said that the mosquito biting during the daytime. Half of them mentioned that stagnant water was the main areas for mosquito breeding (Table 2). Regarding the measures to prevent contact with mosquitoes, by using mosquito nets (28%), insecticides (25%), by window screen (20%), repellent oils (2%) as a preventive practice. Lesser percentage used other available methods such as fans and covering the ventilation holes with nets (21%&4% respectively) (Table 2). Symptoms of dengue virus such as

fever, bleeding and intensive headache was most frequently mentioned (37%, 24% and 13% respectively), also other symptoms mentioned were skin rash, muscular pain and reticular pain while about 4% don't know (Figure 1). Majority of the respondents said that we must go to the hospital for early diagnose and treatment.23% of household fogging by municipal is enough for prevention, about 28% believed that the elimination of larvae breeding is a complete waste of time and 70% of them agreed that they have an important role to play in DF prevention (Table 3).

Table 1. Shows the Socio-demographic characteristic of household.

Variable	Frequency	percentage
Gender		
Male	129	34%
Female	255	66%
Age group(Year)		
15-30	202	53%
31-45	97	25 %
45^{+}	85	22
Education level		
Illiterate	56	15%
Primary	23	6%
Intermediate	110	28%
Secondary	70	18%
University	125	33%
Occupation		
Employed	149	39%
Student	30	8%
House wife	205	53%
Total	384	100 %

Table 2. Knowledge of house hold about dengue fever.

Characteristics	Number	percent
Had prior history with DF	367	96 %
Transmission:		
By Aedes mosquito bite	289	74 %
Air droplet	65	18 %
Others *	22	6 %
Do not know	8	2 %
mosquitoes feeding		
At day time	108	28 %
During night	261	68 %
Do not know	15	4 %
breeding areas		
Stagnant water	195	50 %
Running water	77	21 %
Do not know	112	29 %
Prevention		
Bed net	107	28 %
Using insecticide	96	25 %
Using screen	77	20 %
Using repellant	8	2 %
By used Fan	81	21 %
Cover water contain	15	4 %
Total	384	100 %

*flies or drinking contaminated water

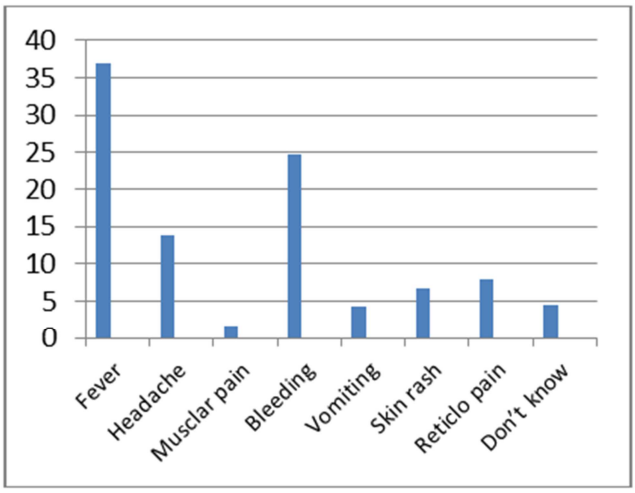

Figure 1. Knowledge of households about symptoms of dengue fever.

3.3. Sources of Information

The main source of information was TV \Newspaper (35%) followed by, relative and friends, internet and school or university (33%, 12% and 11% respectively). The least one was leaflets (9%).

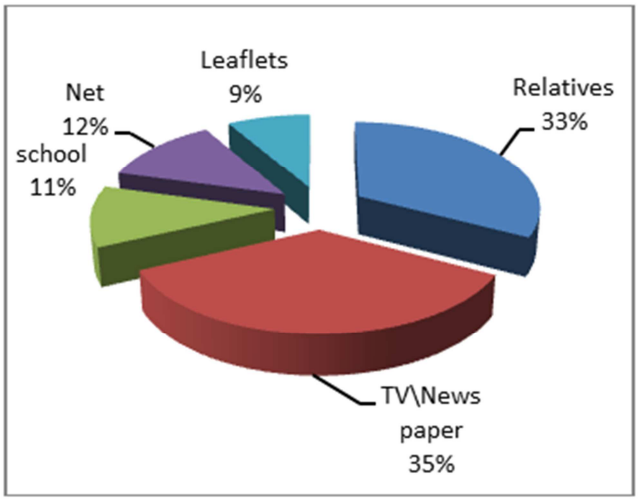

Figure 2. Show the distribution of household according to their sources information.

Table 3. Attitudes of house hold towards dengue fever.

Characteristics	Number\384	100%
At first stage of fever go to hospital	302\384	82%
Fogging by municipal is enough for prevention	84\384	23%
Elimination of larvae is a complete waste of time	109\384	28%
The community has important role in control	258\384	70%

3.4. The Knowledge, Attitudes and Practices of Household

Regards to KAP scores, 58% and 70% of households their knowledge and attitudes were Satisfactory while 73% of them had unsatisfactory behavior about the disease

preventions(Table 4). Also, the study revealed that there is an association between knowledge of household with both attitudes and practices about dengue fever. (Table 5).

Table 4. The overall knowledge, attitudes and practices of household regarding dengue fever.

Score	knowledge	Attitudes	Practices
Satisfactory	58%	70%	27%
Unsatisfactory	42%	30%	73%

Table 5. Association between knowledge of household with both attitudes and practices about dengue fever.

No	independent variables	x^2 Value	Significances
1	Practices	1.177	.000 **
2	Attitudes	13.146	.001**

** Significant

4. Discussion

This study reveals that 96% of households had previous knowledge about dengue fever and most of them mention that television and newspapers were the main sources of their information and this finding agree with report given from Malaysia (98.5%) [12], India (90%) [13] and Pakistan [14]. Mass media is a powerful tool in generating better awareness in dengue prevention and control [15, 16].

(74%) of household mention that the disease is transmitted by mosquito. 28% mention that mosquito feeding occurs during day time. The percentage reflects poor knowledge about the activity of mosquito leading to poorer protective practices against the mosquito and this agree with other studies carried out in Saudi Arabia [16]. Also, the study illustrate that (37%) (24%) (13%) of households mentions that fever, bleeding and intensive headache are the main symptoms subsequently, so they were able to recognize the signs and symptoms of disease which important for early diagnosis and proper treatment. this agree with others study conducted in Saudi Arabia[16], Brazil [17], Hong Kong [18], [19], Pakistan [20], northern Thailand [21] and Cambodia [22].

Regards to KAP scores, the study revealed that (58% and 70% respectively) of household their knowledge and attitudes about dengue fever was satisfactory whereas their practices were unsatisfactory, this supported by [23, 24]. Also, the study reveals that there is an association between knowledge of household with both attitudes and practices about dengue fever; this result is consistent with previous studies conducted in and Malaysia [16] and Pakistan [21].

5. Conclusion

Even though there are improvements in the knowledge of the community about the causes, mode of transmission and clinical manifestations about dengue fever compared with other studies conducted previously in the country was lower. The main source of information was given through TV\Newspaper, while leaflets represented the least percentage in information sources.

6. Recommendations

Jazan University in collaboration with the Ministry of Health should carry out Health promotion campaigns about dengue fever prevention. Knowledge of dengue, the vectors and transmission of disease may be incorporated into the school curriculum, especially in areas where dengue is highly prevalent. Continuous evaluation of KAPs regarding Dengue Fever in Jazan region.

7. Limitations

In this study the sample size was 324, in future work the sample size can be increased and it can be taken from entire regions of Jazan.

Acknowledgments

We would like to thank Future Scientists program 3 in Jazan university for grant this project. Also we would like to thanks all staff members and Students of faculty of public health and tropical medicine in Jazan university for the assistance and their active collaboration during the research period.

References

[1] Egger JR, Ooi EE, Kelly DW, Woolhouse ME, Daviesa CR, Colemana PG., Reconstructing historical changes in the forceof infection of dengue fever in Singapore: implications for surveillance and control, Bulletin of the World Health Organization, 86, 187—96, 2008.

[2] Winch PJ, Leontsini E, Rigau-Perez JG, Ruiz-Perez M, Clark GG, Gubler DJ. Community-based dengue prevention programs in Puerto Rico: impact on knowledge, behavior, and residential mosquito infestation, The American Journal of Tropical Medicine and Hygiene, 67, 363—70, 2002.

[3] Heymann DL, editor, Control of communicable disease manual. eighteenth ed. Washington, DC: American Public Association, 146—52, 2004.

[4] Guha-Sapir D, Schimmer B, Dengue fever: new paradigms for a changing epidemiology, Emerging Themes in Epidemiology, 2, 1—6, 2005.

[5] Mairuhu AT, Wagenaar J, Brandjes DP, van Gorp EC. Dengue:an arthropod-borne disease of global importance, European Journal of Clinical Microbiology & Infectious Diseases, 23: 425—33, 2004.

[6] Endy TP, Chunsuttiwat S, Nisalak A, Libraty DH, Green S,Rothman AL, et al. Epidemiology of in apparent and symptomatic acute dengue virus infection: a prospective study of primary school children in Kamphaeng Phet, Thailand, American Journal of Epidemiology, 156: 40—51, 2002.

[7] Guzman MG, Kouri G. Dengue and dengue hemorrhagic fever in the Americas: lessons and challenges, Journal of Clinical Virology, 27: 1—13, 2003.

[8] Elmusharaf N, Akbar N. Dengue and dengue hemorrhagic fever epidemic in Jeddah2006-2007, in the Second International Conference on Dengue and Dengue Hemorrhagic Fever, 2008.

[9] Binsaeed, Sahli, Noureldin, Mohammed, Dafalla, Dahlan, Kasule and Alsheikh. Knowledge, Attitudes and Preventive Practices of Dengue Fever among Secondary School Students in Jazan, Saudi Arabia, Current World Environment, 10(3): 747-57, 2015.

[10] Alhazmi SA, Khamis N, Abalkhail B, Muafaa S, Alturkstani A, Turkistani AM, Almahmoudi S. Knowledge, attitudes, and practices relating to dengue fever among high school students in Makkah, Saudi Arabia. Int J Med Sci Public Health, 5: 930-37, 2016.

[11] Degallier N, Vilarinhos PT, deCarvalho MSKnoxMS, Caetano JrJ, People's knowledge and practice about dengue, its vectors, and control means in Brasilia (DF), Brazil: its relevance with entomological factors, Journal of the American Mosquito Control Association, 16: 114—23, 2000.

[12] Wan Rozita WM, Yap BW, Veronica S, et al, Knowledge, Attitude and Practice (KAP) Survey on Dengue Fever in an Urban Malay Residential Area in Kuala Lumpur, 2: 62-67, 2006.

[13] Acharya A, Goswami K, Srinath S, Goswami A, Awareness about dengue syndrome and related preventive practices amongst residents of an urban resettlement colony of south Delhi, J Vector Borne Disease, 42: 122-27, 2005.

[14] Syed M, Syeda UR, Habib M, et al, Knowledge, attitudes and practices regarding dengue fever among adults of high and low socioeconomic groups, Journal of the Pakistan Medical Association, 60 (3): 243-247, 2010.

[15] Swaddiwudhipong,W., Lerdlukanavonge, P., Khumklam, P., Koonchote, S., Nguntra, P., Chaovakiratipong, C. A survey of knowledge, attitude and practice of the prevention of dengue hemorrhagic fever in an urban community of Thailand. The Southeast Asian Journal of Tropical Medicine and Public Health, 23: 207–211, 1992.

[16] Hairi, F., Ong, C. H., Suhaimi, A., Tsung, T. W., bin Anis Ahmad, M. A., Sundaraj, C. et al, A knowledge, attitude and practices study on dengue among selected rural communities in the Kuala Kangsar district, Asia-Pacific Journal of Public Health, 15: 37–43, 2003.

[17] Ibrahim Nahla Khamis Ragab, Adnan Al-Bar, Mohamed Kordey, Ali Al-Fakeeh Knowledge, attitudes, and practices relating to Dengue fever among females in Jeddah high schools', Infect Public Health, 2(1): 30–40, 2009.

[18] Degallier N, Vilarinhos PT, deCarvalho MSKnoxMS, Caetano JrJ, People's knowledge and practice about dengue, its vectors, and control means in Brasilia (DF), Brazil: its relevance with entomological factors, Journal of the American Mosquito Control Association, (16): 114—23, 2000.

[19] Mahilum, M. M., Ludwig, M., Madon, M. B., Becker, N, Evaluation of the present dengue situation and control strategies *against* Aedes aegypti *in Cebu* City, Philippines, Journal of Vector Ecology, 30: 277–83, 2005.

[20] Jeelani, S., Sabesan, S., and SubramanianS, Community knowledge, awareness and preventive practices regarding dengue fever in Puducherry – South India, Journal of public Health, 129 (6): 790-96, 2015.

[21] Itrat A, Khan A, Javaid S, Kamal M, Khan H, Javed S, et al, Knowledge, awareness and practices regarding dengue fever among the adult population of dengue hit cosmopolitan, PLoS One, 3(7), e2620, 2008.

[22] Van Benthem, B. H., Khantikul, N., Panart, K., Kessels, P. J., Somboon, P., Oskam, L, Knowledge and use of prevention measures related to dengue in northern Thailand. Tropical Medicine & International Health, (7): 993–1000, 2002.

[23] Khun, S., Manderson, L, Community and school-based health education for dengue control in rural Cambodia: a process evaluation. PLoS Neglected, Journal of Tropical Diseases, (1): 1–10, 2007.

[24] Begonia C. Yboa, Leodoro J. Labrague, Dengue Knowledge and Preventive Practices among Rural Residents in Samar Province, Philippines American Journal of Public Health Research, (1) 2, 47-52, 2013.