Evaluation of knowledge, attitude and practice of medical professionals regarding dengue fever post CME in and around Hyderabad

K. Pavani[1,*], P. Manoj Kumar[2]

[1]Associate Professor, [2]Tutor, Dept. of Microbiology, ESIC Medical College & Hospital, Sanathnagar, Hyderabad

*Corresponding Author:
Email: pavanikalagara@gmail.com

Abstract

Dengue fever is a major public health concern in India. This study aimed to assess effectiveness of continuing medical education (CME) and awareness programme among 154 health care workers (HCW) in tertiary care hospital. Effectiveness of CME and awareness programme was evaluated by questionnaire regarding dengue fever. Knowledge score was found to significantly increase after CME and awareness programme (p value <= 0.05). There is a need to increase health education activities through regular continuing medical education (CME), awareness campaigns and post awareness evaluation to maintain and improve clinical performance of health care workers.

Keywords: Dengue fever, Continuing medical education (CME), Health care workers (HCW)

Introduction

Dengue fever is a mosquito-borne human viral pathogen that belongs to family Flaviviridae found in most tropical and subtropical areas of the world.[1] The principal vector of dengue is Aedes aegypti. There are four dengue serotypes (DEN-1, DEN-2, DEN-3, and DEN-4). The symptoms of dengue fever include high fever, rash, and a severe headache ("dengue triad"). Additional symptoms include severe joint and muscle pain, nausea, vomiting, and eye pain. Dengue and its deadly complications, dengue hemorrhagic fever and dengue shock syndrome, have increased over the past several decades. Dengue fever is high on the list of mosquito-borne diseases that may worsen with global warming. Based on data of National Vector Borne Disease Control Programme (NVBDCP), number of dengue cases in India rose from 28,292 cases in 2010 to 1,11,880 in 2016.[2] Early diagnosis, appropriate management of dengue fever and its complications in patients by health care workers is critical in reducing the mortality rates. Some of the prime factors hampering the effective prevention and management of dengue is the lack of knowledge, indifference towards acquiring it and reluctance towards adhering to the established standards of prevention. Therefore, it is crucial to identify and fill the knowledge gaps through education tools like continuing medical education (CME), awareness programmes, symposia, panel discussion, conferences etc. Continuing medical education (CME) consists of educational activities to maintain, increase the knowledge, skills and professional performance and relationships that a health care worker uses to provide services for patients, the public or the profession.[3] In India there is no standard practice of evaluation of CME programmes by providers or regulators related to outcome measures such as physician performance, patient care or population health. Moreover in present scenario health care workers spend considerable time in CME to maintain their medical licenses. Present study aims to stress the importance of maintaining the professionalism of physicians, as well as improving their practice skills through series of CME, awareness programmes and knowledge evaluation.

Materials and Method

Study Design and Population: The study was conducted in tertiary care hospital in Telangana.

Study design: A questionnaire-based survey was conducted for evaluation of knowledge, attitude and practices regarding dengue after the educational intervention among HCW.

Study population: A total sample of 154 HCW, comprising of medical professionals and nurses who attended CME and awareness programme were recruited as the study population using non-probability convenient sampling because they serve as the frontline healthcare workers for diagnosis and treatment of dengue. For demographics of participants refer Table 1.

Study Instruments and Data Collection: A 20 item structured questionnaire of dengue knowledge, attitudes, and practices was developed. The validity and reliability of the questionnaire were checked. The questionnaire comprised of open and close ended questions in following sections: Epidemiology, prevention, pathophysiology, clinical and laboratory diagnosis, management of dengue fever and its complications, update on recent vaccines and its notification which were covered during dengue CME and awareness session. This structured questionnaire was administered to healthcare providers who attended CME and awareness on dengue fever after their verbal consent of participating in the study. The participants were instructed to answer the questions and give feedback about improvement in awareness post-CME related to each question as yes or no.

Data analysis: The collected data was recorded and analyzed by latest SPSS version. Values of p ≤ 0.05 were considered significant.

Result

A total of 172 questionnaires were recovered (response rate, 76%), and 154 copies were included for further analysis after excluding 10 uncompleted and 08 filled by non-HCW.

Demographic data: Among the 154 participants, there were 64 (42%) doctors and 90 (58%) nurses. Leading specialty of the doctors was general medicine, followed by pediatrics. Most of the respondents had experience < 2years. Less than half of physicians (45.31%) have experience in reporting suspected dengue cases, and only 15.56% of nurses have reported dengue cases (Table 1).

Answers to dengue questionnaire among responders: Most HCW are familiar with the type of organism, vector, risk factors and preventive measures

in dengue containment (Table 2, Q1-Q5). However, less than half of the HCW correctly answered Q6, "Dengue endemicity". Knowledge regarding clinical presentation, notification of dengue cases and management of dengue (Q7-9, Q10 and Q11-14) is more among doctors compared to nurses. In contrast information regarding sample collection and laboratory parameters (Q15, Q16-17) was equally good among doctors and nurses. Knowledge regarding vaccines and other latest updates (Q18, Q19-20) was good among doctors (Table 2).

Response to improvement in awareness regarding dengue post-CME: Further evaluation of improvement in awareness of participants regarding dengue fever post-CME was done. Evaluation was only among participants who have replied correctly to questions. This was based on correct responders reply to yes or no for improvement in awareness. There was significant improvement in awareness post-CME regarding dengue fever among health care professionals. (Table 3)

Table 1: Demographic characteristics of healthcare professionals participating in study on dengue diseases

Characteristics	All participants		Doctors		Nurses	
	No.	%	No.	%	No.	%
Sex						
Male	45	29.2%	41	64%	04	94.5%
Female	109	70.8%	23	36%	86	95.5%
Experience						
<2yrs	74	48.05%	36	56.25%	38	42.22%
2-10yrs	58	37.67%	21	32.81%	37	41.11%
>10yrs	22	14.28%	07	10.94%	15	16.67%
Speciality						
General Medicine	72	46.75%	23	35.94%	49	54.45%
Pediatrics	26	16.88%	14	21.87%	12	13.33%
Other clinical	33	21.42%	17	26.56%	16	17.78%
Others	23	14.93%	10	15.63%	13	14.44%
Practice site						
Government sector	63	40.9%	34	53.12%	29	32.2%
Private sector	91	59.1%	30	46.88%	61	67.8%
Reported a Dengue case						
Yes	43	28%	29	45.31%	14	15.56%
No	111	72%	35	54.69%	76	84.44%

Table 2: Response of HCW regarding dengue fever

No.	Category of question	Average score	
		Doctors N=64	Nurse N=90
Q1-5	Type of organism, vector, risk factors and preventive measures	56 (87.5%)	74 (82%)
Q6	Epidemiology	60 (93.7%)	68 (75.5%)
Q7-9	Clinical presentation	54 (84.3%)	46 (51%)
Q10	Notification of dengue cases	58 (90%)	45 (50%)
Q11-14	Management	58 (87.5%)	46 (51.1%)
Q15	Sample collection	59 (92%)	81 (90%)
Q16-17	Diagnostics / laboratory parameters	57 (84%)	71 (78.8%)
Q18	Dengue vaccines	61 (95%)	38 (42%)

Q19-20	Latest updates on dengue	58 (90%)	42 (46.6%)

Table 3: Response to improvement in awareness regarding dengue post-CME

No.	Category of question	Level of improvement in awareness on dengue			
		Doctors		Nurses	
		Correct response	Improvement in awareness	Correct response	Improvement in awareness
Q1-5	Type of organism, vector, risk factors and preventive measures	56	46 (82%)	74	65(87.8%)
Q6	Epidemiology	60	57(91%)	68	61(89.7%)
Q7-9	Clinical presentation	54	46(85%)	46	43(93%)
Q10	Notification of dengue cases	58	52(89.6%)	45	41(85%)
Q11-14	Management	58	51(87.9%)	46	44(97.8%)
Q15	Sample collection	59	52(88%)	81	75(92.5%)
Q16-17	Diagnosis / laboratory parameters	57	49 (85.9%)	71	69(97%)
Q18	Dengue vaccines	61	58(95%)	38	36(94.7%)
Q19-20	Latest updates on dengue	58	44(75.8%)	42	41(97.6%)

Conclusion

In this study, healthcare providers reported: High level of knowledge and awareness regarding dengue epidemiology, clinical presentation and preventive measures, but demonstrated significant knowledge gaps regarding management, diagnostics and recent updates. Previous studies[4,5,6,7] showed similar findings.

Present study stresses on need to strengthen health education activities among the HCW through regular continuing medical education (CME), awareness campaigns and post awareness evaluation to maintain, improve and update clinical performance of health care workers in order to recognize dengue infections, deliver appropriate treatment thus reducing DHF death rates.

Very few studies[8,9] conducted in various health care setups concluded that there is a need to strengthen health education activities to bridge the critical knowledge gaps among health care workers in order to provide appropriate and timely health care services.

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