

## THE TRAINING OF WIGGLER MONITORING OF PRIMARY SCHOOL TEACHERS AND STUDENTS IN SURABAYA TO IMPROVE ERADICATION OF DENGUE HEMORRHAGIC FEVER

**Florentina Sustini, Susilowati Andajani, Atika**

Department of Public Health and Preventive Medicine

Faculty of Medicine, Airlangga University, Surabaya

### ABSTRAK

*Demam berdarah dengue (DBD) merupakan masalah kesehatan di Surabaya. Kami mempelajari peningkatan pengetahuan guru dan siswa sekolah dasar tentang penanggulangan DBD. Dari 854 sekolah dasar, terdapat 692 guru yang terpilih menggunakan purposive sampling. Sedangkan 1343 siswa yang terpilih menggunakan randomized sampling. Intervensinya adalah pelatihan DBD dalam satu hari pada Mei sampai dengan Juni 2011. Variabel penggantungan adalah pengetahuan guru dan siswa sedangkan variabel bebasnya adalah pelatihan DBD. Data dianalisis menggunakan t test pada 2 sampel berpasangan. Pelatih terdiri dari 58 dokter dan alumni dari Fakultas Kedokteran Universitas Airlangga. Kami menemukan bahwa terdapat 692 guru dengan nilai pengetahuan sebelum dilakukan pelatihan DBD minimal adalah 22.5 dan maksimal 100, dengan rerata 76,33. Setelah melakukan pelatihan, nilai pengetahuan DBD minimal adalah 40 dan maksimal adalah 100, dengan rerata 90.55. berdasarkan t test dari 2 sampel berpasangan diperoleh hasil yang signifikan dengan  $p=0.001$ . Pelatihan dalam penanganan DBD dapat meningkatkan pengetahuan guru dan siswa di sekolah dasar tentang pemantauan jentik-jentik untuk menanggulangi DBD. (FMI 2012;48:28-31)*

**Kata kunci:** Demam berdarah dengue, pemantau jentik-jentik, pemberantasan DBD, guru dan siswa sekolah dasar

### ABSTRACT

*Dengue hemorrhagic fever (DHF) is one of the health problems in Surabaya. We studied the increasing of the knowledge of teachers and students in elementary school about control of DHF. From the 854 elementary school, there were 692 teachers, who were selected by purposive sampling. Meanwhile, 1,343 students who were selected by random sampling. The intervention was a training of DHF at one day in May – June 2011. Dependent variabel were knowledge of teachers and students, independent variabel was training of DHF. Data was analyzed by t test of 2 dependent sample. Trainer were 58 medical doctors and alumnus of Medical School of Airlangga University. We found that there were 692 teachers with score of DHF knowledge before training minimal was 22.5 and maximal 100, mean was 76.33. After training, the score of DHF knowledge minimal was 40 and maximal was 100, mean 90.55. By t test of 2 dependent samples there was significant result with  $p=0.001$ . There were 1,343 students with score of DHF knowledge before training minimal was 22.5 and maximal 97.5, mean was 67.89. After training, the score of DHF knowledge minimal was 30 and maximal was 100, mean 84.19. By t test of 2 dependent samples there was significant result with  $p=0.001$ . The training of DHF can increase the knowledge of teachers and students in elementary school about wiggler monitoring to eradicate DHF. (FMI 2012;48:28-31)*

**Keywords:** dengue hemorrhagic fever, wiggler monitoring, eradication DHF, teachers and students elementary school.

**Correspondence:** Florentina Sustini, Department of Public Health and Preventive Medicine, Faculty of Medicine, Airlangga University, Surabaya

### INTRODUCTION

Dengue hemorrhagic fever is one of the health problem in Surabaya due to the high incidence rate of 55/100.000 population. The majority of patient who live with DBD were children. During 2007 to 2010, incidence rates were respectively for 106.5/100.000, 75.6/100.000, 78.4/100.000, 89.4/100.000 population. In range of 2007 to 2010, the Case Fatality Rate (CFR) or mortality rates were 0.77%, 0.46%, 0.39%, 0.5%. These numbers were suitable with CFR national target which less than 1%. Nevertheless, the lack of public awareness of

mosquito's nest eradication induced wigglers free value can't reach minimal target i.e. 95%.

Health Department in the district of Surabaya has implemented several efforts to prevent DHF through the activities in 53 health centers. The activities were finding the patient, referred the patient to the hospital, public health education, the training of mother wiggler monitor (bumantik and wamantik), abatement and fogging, increase the eradication of mosquito's nest (PSN) and the prevention of DHF through electronic or printed media. But, the morbidity rate was still

relatively high and wiggler free value had not reached 95%.

The training was conducted by the team of PHKI of Airlangga University theme 4 about the treatment and prevention of DHF through focus group discussion (FGD), making film and leaflets for material, training, monitoring and evaluation of the trained cadres. In 2011, the training was continued to accelerate the increase of cognitive understanding for cadres about PSN, counseling, suspect detection of DHF, increase the knowledge and attitude of population about PSN. The training of cadres is expected can increase public awareness of PSN to reduce the number of DHF patients, especially among school children. The cultivation of knowledge in early age is expected to change the behavior of a better lifestyle.

## MATERIALS AND METHODS

The research design was a quasy experimental. The population was teachers and students in 4th grade primary school in Surabaya. The sample in this study is the fourth homeroom of school health unit teachers taken by purposive sampling and fourth grade student taken by randomized sampling that every elementary school asked to send 2 students that obtained 994 primary schools, 994 teachers and 1988 fourth grade students in Surabaya. Training was done onetime in one of the primary school and local district Education

Department office (there are 32 districts). Overall there were 72 training locations were conducted in May and June 2011. The trainers were a doctors and the alumnus of medical school, Airlangga University. To test the understanding of cadres, before and after training was given pre-test and post-test about the material of dengue fver diseases. The sudy was supported with quisioners which given for pre and post test, training materials, film of “Sang Pencegah Demam Berdarah”, wiggler-monitoring card for student and teacher. The difference knowledge of teachers and students before and after had the training were analyzed in t test to 2 paired samples.

## RESULTS

There were 845 of the 994 primary schools (85% who had sent delegations to this training. From the 692 teachers, 184 teachers were male and 508 were female. While from 1343 students, 404 students were male and 939 were female. So the amount of participant was 588 were male and 1447 were female. The result of the evaluation which conducted before and after the training about teacher's cognitive gained the improvement score of 13.05. Based on the data were conducted the t test to two paired sampling between teacher's cognitive score before and after the training which obtained the significant result with score was  $p=0,001$ . After the training, it was obtained the increase of teacher's cognitive was 93,6% and the stable of teacher's cognitive was 6,4%.

Table 1. The numbers of participant in cadres training

Participant	Participant target	Involved participant	Participant who obtain pre-test and post-test		
Elemntary Schools	994	845	85%		
Teacher	994	845	85%	692	82%
Student	1998	1690	84.6%	1343	79.5%

Table 2. The evaluating result table of teacher's cognitive which obtained before and after evaluation.

	Before training	After training
Total of teacher	692	692
Minimum cognitive score	22.50	40
Maximun cognitive score	100	100
Score range	76.33	90.55
Modes	70.00	98
SD	11.88	8.86

Tabel 3. The evaluating result table of student's cognitive which obtained before and after evaluation.

	Before training	After training
Total of student	1343	1343
Minimum cognitive score	22.50	30
Maximum cognitive score	97.50	100
Score range	67.89	84.19
Modes	70	96
SD	13.14	10.63

The result of the evaluation which conducted before and after the training about student's cognitive gained the improvement score of 16.29. Based on the data were conducted the t test to two paired sampling between student's cognitive score before and after the training which obtained the significant value with score was  $p=0,001$ . After the training, it was obtained the increase of teacher's cognitive was 92,8%, the stable of teacher's cognitive was 6,8% and the decline student's cognitive was 0,4%.

## DISCUSSION

There were 85% of the number of participants who were invited, was conducted an evaluation of the result of the training to the teachers and students through the post-test. It was obtained the increase of their cognitive understanding based on the result of post-test. The increase of DHF's eradication knowledge was especially important on primary school children because it would be easier to be acceptable and remembered.

The success of this cadre training program was proven by the increase of teacher and student's cognitive. On the result of teacher's cognitive after conducted by post-test was obtained the significant value was  $p=0,001$ . This condition was consistent with the research about "The Training to increase posyandu capability cadres in DHF's prevention in village of Joyotakan, sub-district of Serengan Surakarta" which had the enhancement of participant's cognitive understanding to be better 93,3% (Kusumawati & Darnoto 2008).

Before the training was conducted, the student had difficulty to distinguish between the causes and vectors of DHF disease. But, the average of students cognitive understanding had achieved the adequate score that 67,89 and reached 84,19 after trained. This increase had a significant value of  $p=0,001$ . This condition was consistent with the research of Sutrisno in 2005, "The effect of the training about Dengue Mosquito's Nest eradication to change the knowledge and attitude of Cemeng I elementary school's students in Sambungmacan Sragen". Another study was performed consistently to the three hundred students in

Sleman by a team of health centers about "The perceptive kids to prevent DHF disease" (Puskesmas Sleman 2011). Both of these studies provided similar results that there was an increased the understanding of dengue hemorrhagic fever disease.

The training of cadres to monitor the wiggler of mosquito was not only limited to the primary school students. But, it could be conducted to the senior and junior high school students. The training of the teacher and students to be wiggler monitor must be expanded and continued because there are many teacher and student still do not understand about the prevention of DHF.

## CONCLUSION

In summary, the training of selected teachers and students as the wiggler monitoring is able to increase their knowledge about treatment and prevention of DHF and there were significant different score of teachers and students before and after training of DHF.

## ACKNOWLEDGMENT

The author sincerely thanks to the head of Health Department of Surabaya for its funding, all of head of health centers and staffs in Surabaya, to the 58 doctors from Medical Faculty of Airlangga University, the head of National Education Department in Surabaya and all of UPTD of National Education Department in Surabaya. Thanks to Fatihatun Nayyiroh, S.Ant., Agus Asiyanto and Satrio Wibowo who had helped this training.

## REFERENCES

- Kusumawati Y and Darnoto S (2008). Pelatihan peningkatan kemampuan kader Posyandu dalam penanggulangan demam berdarah dengue (DBD) di Kelurahan Joyotakan Kecamatan Serengan Surakarta. *Warta* 11, 159-169

Puskesmas Sleman (2011). Pelatihan TABO untuk Cegah DBD. Available from <http://puskesmas-sleman.blogspot.com/2012/07/pelatihan-tabo-untuk-cegah-dbd.html>. Accessed November 20, 2011

Sutrisno (2005). Pengaruh pelatihan pemberantasan sarang nyamuk demam berdarah dengue terhadap perubahan pengetahuan dan sikap anak Sekolah Dasar Negeri Cemeng 1 Sambungmacan Sragen. Bachelor Thesis. Universitas Diponegoro, Semarang