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# Effect of Planned Teaching on Knowledge among Community Health Volunteers Regarding Preventive Measures of Mosquito-Borne Diseases in Selected Urban Area

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## Abstract

**Introduction:** Control of mosquitoes is something of utmost importance in the present day with rising number of mosquito-borne illnesses. Which is constitute an important cause of morbidity and mortality, especially in India knowledge of community health volunteer about prevention of mosquito-borne diseases is important for designing community-based interventions.

**Aim:** The aim of the study was to find out the effect of planned teaching on knowledge among community health volunteers regarding preventive measures of mosquito-borne diseases in selected urban area.

**Subjects and Methods:** One group pre-test and post-test research design was adopted, where the group was assessed with the structured questionnaire before and after. A structured questionnaire and checklist administered to assess the knowledge on preventive measures of mosquito-borne diseases.

**Results:** We observed that knowledge as well as control measures were significantly better after the implementation of the structured teaching program ($P < 0.001$). Previous experience was the only demographic characteristic associated with the knowledge score.

**Conclusion:** Planned teaching program will be effective in improving regarding preventive measures of mosquito-borne diseases among community health volunteers in selected urban area.

**Keywords:** Community health volunteer, effect, mosquito borne diseases, planned teaching, preventive measures

## Introduction

Mosquitoes are one of the deadliest insects in the world. Nearly 700 million people get a mosquito-borne illness each year, resulting in over one million deaths.[1]

Dengue, malaria, and chikungunya struck over 1.13 million people in the country past year. Of these, 766 succumbed. India bears a huge burden of mosquito-borne diseases, contributing 34% of global dengue and 11% of global malaria cases. Despite this, the country has made no headway in tackling the mosquito menace.[2]

The mosquito-borne disease results in ill health problems and death, which has also been emphasized in national health policy[3] and the Millennium development goal.[4] National vector-borne disease control program[5] under the aegis of national rural health mission[6] includes preventions and control of mosquito-borne disease. People's awareness and knowledge play an important role in controlling vector-borne diseases. In spite of social media and educational awareness, community participation is still far below the expectation. Community involvement completely depends on individual knowledge, awareness, and attitude toward diseases.

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Hence, this study was aimed to determine the effect of planned teaching on knowledge among community health volunteers regarding preventive measures of mosquito-borne diseases in selected urban area.

## Subjects and methods

Thirty community health volunteers from four different health post of urban area in three primary health centers and one community health center in urban metropolitan city were included in this pre-experimental one group pre-test and post-test design. Community health workers were included who were available at the time of data collection, had knowledge of Hindi and Marathi language, and willing to participate in the study. Subjects were excluded if they were working as ANM or multipurpose worker, and/or underwent same training earlier.

### Study tool

The study tool consisted of two sections. Section I contained demographic variables of the subjects. The variables included age, marital status, education, years of experience, income, and source of information. Section II contained questions related to structured teaching program.

### Data collection procedure

The investigator introduced self to the community health volunteers and spends time in developing a rapport with them. The explanation was given about research in own language to the selected subjects and written consent was taken. The investigator provides clarification whenever they have doubt. The score obtained was calculated and considered as pre-test score. Planned teaching was given to selected subjects with the help of A.V. aids-video, flashcards, flip charts, posters, charts, and foodstuffs. Post-test was given after 5 days using the same questionnaire and the score obtained was calculated and was considered as the post-test score. The investigator carried out this procedure on September 8, 2015–October 11, 2015.

### Statistical analysis

Data were presented as frequency, percentages, mean, and/or standard deviation. Paired *t*-test was used to compare means within the group. Chi-square test was used to measure association between the variables. $P < 0.05$ was considered significant.

## Results

### Demographic characteristics

Table 1 shows demographic variables. About 33% of the subjects aged between 32 and 37 years. About 93% of the subjects were married. The majority (53%) had completed secondary level of education. Only 17% of subjects had more than 10 years of experience. About 93% of subjects had monthly income between 4100 and 5000 rupees. Induction programs were the source of information for the majority (97%) of the subjects.

### Effect of teaching program on knowledge about mosquito-borne diseases

We observed that knowledge score was significantly higher after implementation of the structured teaching program in comparison to the knowledge score before implementation of the structured teaching program (31.93 ± 3.98 vs. 19.7 ± 5.01; $P < 0.001$) [Table 2].

### Effect of teaching program on about preventive measures of mosquito-borne diseases

We observed that score about preventive measures was significantly higher after implementation of the structured teaching program in comparison to the knowledge score before implementation of the structured teaching program (9.63 ± 0.61 vs. 4.26 ± 4.61; $P < 0.001$) [Table 3].

### Association of demographic variables with knowledge score

We found that experience was significantly associated with the pre-test knowledge score ($\gamma^2 = 3.37$; $P = 0.049$). We also found that age was not associated with the pre-test knowledge score ($\gamma^2 = 1.91$; $P = 0.151$).

## Discussion

Knowledge and practices of the community about prevention of mosquito-borne diseases are an important aspect to assess the need of community-based interventions. In the same context, elimination of the breeding sites from the human habitat is the most effective way to manage mosquito-borne diseases;

**Table 1: Demographic variables**

| Demographic variables | *n* | Percentage |
|---|---|---|
| Age (years) | | |
| 20–25 | 4 | 13.33 |
| 26–31 | 7 | 23.33 |
| 32–37 | 10 | 33.33 |
| 38–44 | 9 | 30 |
| Marital status | | |
| Married | 28 | 93.33 |
| Unmarried | 2 | 6.67 |
| Education | | |
| Illiterate | 0 | 0 |
| Primary | 1 | 3.33 |
| Secondary | 16 | 53.33 |
| Graduate | 13 | 43.33 |
| Experience (years) | | |
| <4 | 9 | 30 |
| 4–6 | 13 | 43.33 |
| 7–10 | 2 | 6.67 |
| >10 | 5 | 16.67 |
| Monthly income (rupees) | | |
| 1100–2000/- | 0 | 0 |
| 2100–3000/- | 1 | 3.33 |
| 3100–4000/- | 1 | 3.33 |
| 4100–5000/- | 28 | 93.33 |
| Source of information | | |
| Induction program | 29 | 96.67 |
| Television | 1 | 3.33 |
| Pamphlets | 0 | 0 |
| Newspapers | 0 | 0 |

Data expressed as frequency and percentages

**Table 2: Comparison of knowledge before and after implementation of the structured teaching program**

| | Before implementation of the structured teaching program | After implementation of the structured teaching program |
|---|---|---|
| Knowledge score | 19.7±5.01 | 31.93±3.98 |
| *P*-value | <0.001 | |

Data expressed as mean±standard deviation; df 29, level of significance is 0.001 for table value of 3.66

**Table 3: Comparison of score about preventive measures before and after implementation of the structured teaching program**

| | Before implementation of the structured teaching program | After implementation of the structured teaching program |
|---|---|---|
| Knowledge score | 4.26±4.61 | 9.63±0.61 |
| *P*-value | <0.001 | |

Data expressed as mean±standard deviation; df 29, level of significance is 0.001 for table value of 3.66

hence, social and behavioral interventions at household level are thought to be the most viable measures for these diseases.[7,8]

In our study, induction training was the source of information for the majority of the subjects. Since we have conducted this study on community health workers, the source of information is the training program. Kumar and Gururaj stated that appropriate communication channels are to be used to make the health education strategy effective.[9] Television and cinema have been quoted as important sources of information. In the urban area, television and newspapers are the major available media at home. In the rural area, television and radio are the major media available at the household level. These media have to be effectively used. There is a need to build appropriate information, education, and communication materials to achieve social mobilization.

Our study found that the teaching program significantly increased knowledge as well as preventive measures. This is in concordance with Vaishnavi who reported similar findings.[10]

## Conclusion

There was an improvement in the knowledge regarding mosquito-borne diseases and control measures of the community health workers after the teaching program. Such education interventions need to be done on a regular basis to improve their knowledge for better control of mosquito-borne diseases.

## Conflicts of interest

All authors declare they have no conflicts of interest.

## Financial disclosure

Nil.

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