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Original Research Article

Effectiveness of planned teaching programme on knowledge regarding dengue fever and its preventive measures among adult population in selected urban slums

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ABSTRACT

Background: Dengue fever is the most critical mosquito-borne disease in the world caused by one of any of four serotypes of dengue virus. There has been a 30-fold increase in global incidence over the past fifty years. Epidemics of dengue result in human suffering, strained health services and massive economic losses.
Methods: Quasi experimental one group pre-test-post-test research design was adopted to conduct the study among forty adults aged between twenty to 40 years residing in Janta Nagri, Urban slum, Lucknow, Uttar Pradesh, who matched the inclusion criteria were selected through non-probability purposive sampling technique. On day one pre-test followed by planned teaching programme was conducted and after seventh day post-test was taken. The data was analysed using descriptive and inferential statistics.
Results: The results revealed that the mean post-test knowledge score was higher than mean pre-test knowledge score with standard deviation 20.15±4.02 and 7.67±3.11 respectively. The improvement of knowledge score is the mean difference of 12.5 which shows that there was a significant change in knowledge level of adult population.
Conclusions: The study concluded that the planned teaching programme was effective in improving the level of knowledge regarding dengue fever and its preventive measures.

Keywords: Effectiveness, Planned teaching programme, Dengue, Knowledge, Adult population, Urban slum

INTRODUCTION

Communicable diseases have affected human life even since earlier times and continue to be a major health problem. Dengue is the most rapidly spreading mosquito borne viral disease of mankind, also known as 'break bone fever' for its classic symptoms of severe joint and muscle pain and high fever.[1] With a 30-fold increase in global incidence over the last five decades, dengue has been identified as one of the 17 neglected tropical diseases by World Health Organization (WHO).[2] Dengue fever is a vector borne illness caused by female Aedes mosquitoes. Aedes aegypti is the principal vector however at present Ae. albopictus, has also been reported to play a role in Southern and North Eastern States. Dengue fever is caused by infection with one of the four serotypes of dengue virus (DENV1,2,3,4). Once if the person gets affected, acquires long-life serotype specific immunity and secondary infections are associated with elevated risks of severe disease outcomes and possess risk for DHF.[3]

There is an estimation of 50–100 million cases of dengue fever in which 0.25-0.5 million cases of dengue fever require hospitalization. Most case fatality cases are among children and young adults. The loss to the economy is 264 disability adjusted life years (DALYs) per million population per year.[4]

According to Ministry of Health and Family Welfare a total of 1,88,401 cases and 325 deaths were reported from 29 States and 6 Union Territories in 2017 whereas a total of 10,1192 cases and 172 deaths were reported from 29 States and 6 UTs in 2018.[5]

WHO in January 2019 announced their new 5-year strategic plan in which dengue was identified as one of the four main infections threatening global health among the 10 highest priority health issues. The five key elements needed to achieve the dengue public health targets identified by the WHO Global Strategy are integrated surveillance and outbreak preparedness, sustainable vector control and basic operational and implementation research. India plays a key role in contributing towards these targets. In India, an estimated 33 million clinically apparent dengue cases occur each year contributing as a third dengue burden country globally.[6]

Dengue has become one of the major public health problem in India. The risk of dengue has been increased due to demographic and societal changes such as unplanned and uncontrolled urbanization and concurrent population growth which has led to the poor public services, particularly water supply and solid waste disposal leading to increase in the breeding potential of the vector species. At present no specific drug or vaccine is available for prevention of dengue in India. Hence it is needed to generate awareness among the community through Information Education Communication/ Behaviour Change Communiction activities.[7]

Objective

Effectiveness of planned teaching programme on knowledge regarding dengue fever and its preventive measures among adult population in urban slums.

METHODS

Research approach

Quantitative research approach was used.

Research design

The research design was quasi experimental one-group pre-test post-test design.

Research setting

The study was conducted at Janta Nagri (urban slum), Lucknow, Uttar Pradesh.

Study population

The study population included: adults of age group 20-40 years residing in Janta Nagri, Lucknow who met the designated inclusion criteria.

Sample size

The estimated sample size is 80 (calculated by power analysis).

Formula : $n = Z^2Pq \div d^2$

Where n is sample size.

z is confidence interval: 95% (z= 1.96)

P is population proportion=25%

(In the base study, proportion of respondents having good knowledge regarding dengue fever is 25% where the sample size is 60).[8]

d is precision or error (10% i.e.0.01)

*Note: Due to covid pandemic only 40 samples could have been selected for the study.

Sampling technique

Purposive sampling technique was used in the study.

Inclusion criteria:

Adults aged between 20 years to 40 years residing in Janta Nagri (Urban slum) who were available and willing to participate in the study.

Exclusion criteria

Adults who were critically ill and suffering with mental disorder.

Data collection tool

Section A: socio demographic

The socio-demographic variables used in the study were age, gender, type of house, educational qualification, occupational status, monthly income, type of family, type of drainage system, storage of drinking water, presence of cattle or animal, previous knowledge regarding preventive measures of dengue and its source of information.

Section B: structured knowledge questionnaire

It consists of 24 item, seeking information regarding level of knowledge regarding dengue fever and its preventive measures among adult population comprising of multiple choice questions.

Development of intervention

The planned teaching programme was prepared under the following headings; definition of dengue fever,

epidemiological triad, incubation period of dengue fever, clinical features dengue fever, complication, diagnostic evaluation, medical management of dengue fever and prevention of dengue fever.

Data collection

The data was collected from through structured knowledge questionnaire to the adult population, for duration of 45 days from 01st March 2021 to 17th April 2021.

Ethical aspects

The ethical permission was approved by Institutional Ethics Committee of King George's Medical University, Lucknow, U.P. Informed consent was taken from the study participants who were willing to participate and freedom was given to withdraw from the study at any time. They were assured for the confidentiality and safety of the data provided by them. Care was taken for no exploitation of human rights.

RESULTS

Section I: Description of frequency and percentage distribution of socio-demographic variables (n=40)

Table 1 shows that the Majority of the adult population belonged to the age group 31-40 years and majority of the total population belong to male population. Majority of the subjects were uneducated.

Table 1: Frequency and percentage distribution of subjects in relation to socio-demographic variables.

Variable	Categories	Frequency (f)	Percentage
Age (in years)	20-30	18	45
	31-40	22	55
Gender	Male	23	57.5
	Female	17	42.5
Educational Qualification	Uneducated	22	55
	Primary education	14	35
	Secondary education	2	5
	Diploma/certificate	2	5
	Graduate	0	0
Occupation	Government job	0	0
	Private job	5	12.5
	Self-employed	19	47.5
	Unemployed	7	17.5
	Daily wages	6	15
	Home maker	3	7.5
Type of house	Kutcha	25	62.5
	Pucca	5	12.5
	Semi-pucca	10	25
Type of family	Nuclear	29	72.5
	Joint	7	17.5
	Extended family	4	10
Monthly family income	Less than Rs 3,000/-	8	20
	Rs. 3001 to 5000/-	13	32.5
	Rs. 50001 to 7000/-	17	42.5
	More than Rs. 7001/-	2	5
Type of drainage system	Open	26	65
	Closed	615	
	No drainage system	820	
Storage of drinking water	Overhead tank	5	12.5
	Earthen pots	4	10
	Bucket	14	35
	Any other	17	42.5
Presence of cattle/animal	Yes	24	60
	No	16	40
If yes, animal house is located	Separate	5	20.89
	Within house	11	45.83
	No fix pace	8	33.33

Continued.

Variable	Categories	Frequency (f)	Percentage
Previous knowledge regarding preventive measures of dengue	Yes	11	27.5
	No	29	72.5
If yes, source of information regarding preventive measures of dengue	Newspaper/ radio/ television/ internet	5	45.4
	Health personnel	3	27.28
	Friends and relatives	3	27.28

Table 2: Comparison of pre-test and post-test knowledge scores of subjects.

Knowledge score	Mean	Standard deviation	df	Paired t- value
Pre-test	7.67	3.11	39	5.89
Post-test	20.15	4.02		

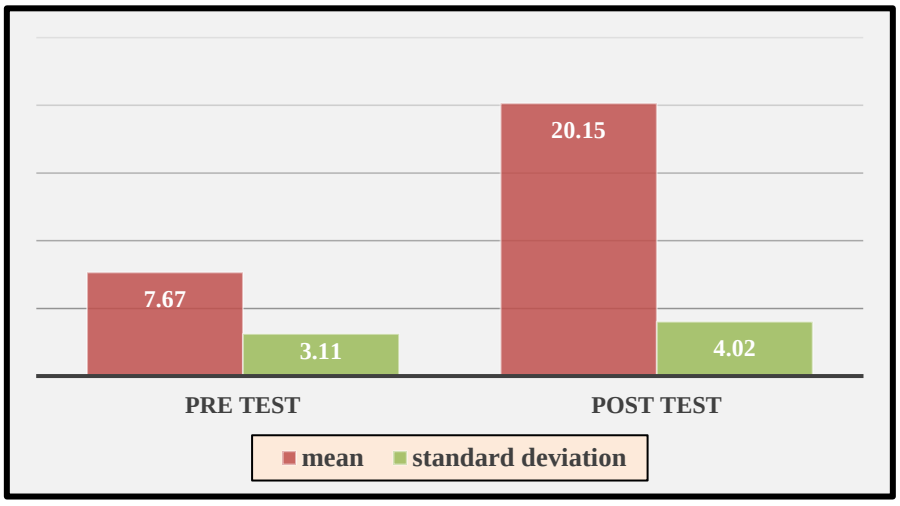

Figure 1: Comparison of pre-test and post-test knowledge scores of the subjects.

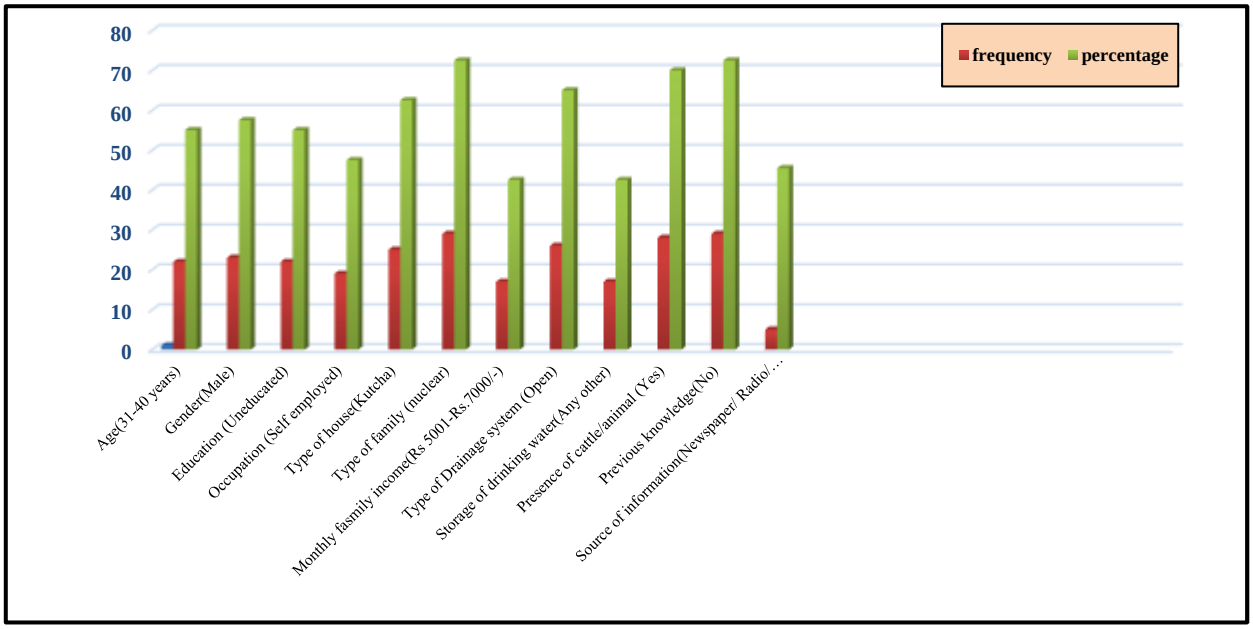

Figure 2: Frequency and percentage distribution of socio-demographic variables.

Majority of the sample were residing in kutcha house. Majority of the samples were living in nuclear family. Majority of the samples had monthly family income of Rs. 5,001 to Rs. 7,000/-. Majority of the adult population had open drainage system. Majority of the samples were storing the drinking water in any other storage utensils. Most of the subjects had cattle/animal and majority of them had animal house within their house. Majority had the source of information from newspaper/ radio/ television/ internet.

Section-II: Effectiveness of planned teaching programme by comparing the pre-test and post-test knowledge scores of subjects.

Table 2 depicts that the mean pre-test knowledge score and standard deviation of the subjects were 7.67 and 3.11 whereas the mean post- knowledge score and standard deviation was 20.15 and 4.02 respectively and the mean difference was 12.5.

The researcher calculated the paired t-test value and compared the calculated t- value (5.89) with the tabulated value (2.45) on 39 degree of freedom.

The calculated value lies beyond the tabulated value and this result shows that there was significant change in the knowledge level of adult population in post-test. So, this is evident that the planned teaching programme on knowledge regarding dengue fever and its preventive measures was found effective in terms of knowledge.

DISCUSSION

Section I: description of frequency and percentage distribution of socio-demographic variables.

Figure 2 shows that the majority (55%) of the adult population belonged to the age group 31-40 years and majority (57.5%) of the samples were comprised of male population. Majority (55%) of subjects were uneducated. Majority (62.5%) of the sample were residing in kutcha house. Majority (72.5%) of the samples were living in nuclear family. Majority (42.5%) of the samples had monthly family income of Rs. 5,001 to Rs. 7,000/-. Majority (65%) of the adult population had open drainage system. Majority (42.5%) of the samples were storing the drinking water in any other storage utensils. 60% of total subjects had cattle/animal and majority of them (45.83%) had animal house within their house. Only 27.5% of subjects were aware about dengue fever and its preventive measures, out of which majority (45.45%) had the source of information from newspaper/ radio/ television/ internet.

Section-II: effectiveness of planned teaching programme regrading dengue fever and its preventive measures.

The researcher calculated the paired t-test value for the tabulated and compared the calculated t- value (5.89) with the tabulated value (2.45) on 39 degree of freedom at $p<0.05$ level of significance. The calculated value lies beyond the tabulated value and this result shows that there was significant change in the knowledge level of adult population in post-test. So, this is evident that the planned teaching programme on knowledge regarding dengue fever and its preventive measures was effective in terms of knowledge.

The above-mentioned findings are supported by following study

These findings are supported by a study in which the calculated 't' value was 17.24 and tabulated value was 1.67 at $p<0.05$ level of significance on 59 degree of freedom Since the calculated value is greater than the tabulated value the researcher rejected the null hypothesis and accepted the alternative hypothesis. So, it can be concluded that the awareness programme was effective in improving the knowledge score of the participants regarding prevention of vector borne diseases.[9]

Limitations of the study

During data collection period, some of the study participants were reluctant to participate in the study due to COVID-19 pandemic. The study was limited to the age group of 20-40 years only.

CONCLUSION

The result shows that the level of knowledge of subjects regarding dengue fever and its preventive measures was poor in the pre-test when compared to the post-test. The study finding proved that the planned teaching was effective in improving the knowledge of adult population regarding dengue fever and its preventive measures. So it is concluded that there is a need of providing proper information and education regarding dengue fever, its sign and symptoms, complications, use of preventive measures and its importance. The health care provider should provide health education to improve the knowledge regarding dengue fever and its preventive measures.

Recommendations

A similar study can be conducted with a larger sample for the purpose of generalization, or to assess the knowledge regarding dengue fever & its preventive measures among different age group of population. The study can be conducted using different research design.

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