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Research Article

An Interventional Study To Assess The Knowledge And Awareness Regarding Malaria Among Urban Slum In East Delhi

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ABSTRACT

Aim &Objective: To assess the knowledge and awareness regarding malaria in urban slum of East Delhi and spread knowledge and awareness through proper counselling to prevent and control malaria among study population.

Methods: A community based longitudinal interventional study was conducted for the period of three months from 6TH Feb-6th May 2017. A simple random sampling technique was used to select the study participants. Total 250 participants were interviewed about symptoms, transmission of disease, pre-disposing factor prevention and control method regarding malaria.

Result: Out of 250 participants 28% were males and majority were below 40 years of age. Most of the respondent had heard about malaria. Before intervention (92.8%) of respondents attributed the cause of malaria to mosquito bite after intervention it increased to (96.4%).About 90% of the respondents before intervention knew that fever is the major symptom of malaria. Knowledge and Awareness of prevention and control measures about malaria included eliminating mosquito breeding sites before intervention it was 86% and after intervention it increased to 96%, use of mosquito repellent before intervention was 51.6% and after intervention it increased to 86%, similarly use of mosquito nets increased from 10% to 17%.

Conclusion: There is good level of awareness among the study population about malaria as a disease but have lack of adequate knowledge regarding malaria thus achieve better prevention and control of the disease. There is need of IEC/BCC related interventions to enhance their level of knowledge and awareness among the community to increase the knowledge, awareness and prevention about malaria.

INTRODUCTION:

Malaria has been a cause of human suffering since time immemorial. In 1880 by Ross AL discovered that it was transmitted by the mosquito. Since then, despite enormous effort in finance, manpower and other resources to combat the disease, it is still a serious public health problem.

India is the world's biggest democracy, the second most populous country with over 1.3 billion people and the seventh largest by area. It is a federal constitutional republic governed under a parliamentary system consisting of 29 States and 7 union territories. The landscape of India is widely varied with vast plains, large deserts, thick forests, tall mountain ranges and also two groups of islands. The population is also extremely diverse comprising various religions, ethnic groups amongst others. Despite being one of the world's fastest growing economies, India continues to face challenges of poverty and poor health. Though the country's health-related indicators have improved since the launch of National Rural Health Mission (NRHM) in 2005, much still remains to be achieved.

Malaria, once a rural problem has become an urban problem now, especially adversely affecting slum dwellers due to unplanned urbanization, over population, poor drainage, socio-economic factors, lack of adequate health facilities, sanitation, global warming, and other issues.

The loss in health and economy of the country due to malaria is immense. This has been duely recognized and published by WHO elimination of malaria thus is a preferred area for global investment. and is a preferable health area for investment globally to eliminate malaria..It has intensified the effort of all public health professionals and other stakeholders involved in malaria. This has led the way forward to aware the community with necessary knowledge to use available resources to fight the disease on their own and also efforts are being made for sustainable interventions.

The study will help to gather important information for the concern stakeholders involve in fighting Malaria in general and the NVBDCP, MoHFW in particular to devise and execute plans and interventions towards the control of the disease, and also to improve the health seeking behaviour of the community. Specific objectives of the study include finding out the awareness of the community members regarding spread of disease, predisposing factors, treatment, control and prevention of malaria, and the effects of the disease on the community.

RESEARCH METHODOLOGY

- **Type of study:-** Longitudinal interventional study
- **Place of study:-** The study was conducted in slum areas of East Delhi region
- **Duration of study:-** Three months (6th Feb to 6th May 2017),
  1st month- prepare protocol
  2nd month- data collection
  3rd month- data analysis and report writing
- **Study population:-** urban slum population residing in East Delhi region
- **Inclusion criteria:-**
  a. Head of household, if not available then any adult above 18 years was interviewed.
  b. Those who were willing to give consent.
- **Exclusion criteria**
  a. Age below 18 years
  b. Those suffering from mental disorder.
- **Study tools:-** Self administered, pre tested questionnaire was designed to assess the knowledge and awareness regarding malaria.

The questionnaire comprised of four parts:
i) Socio demographic data
ii) Knowledge regarding malaria
iii) Attitude regarding malaria control
iv) Practices regarding malaria

- **Sampling:-** Simple random sampling was done.
- **Sample size:-** Due to constraints of time a convenient sample of 250 households was taken.
- **Methodology:-** After gaining permission from the director of NVBDCP Delhi each of participant was contacted individually and aim of the study was explained. A face to face interview was conducted by using questionnaire. The pre structured Performa was used to access the existing knowledge malaria, which consisted of open ended questions. Educational intervention was done on the same day by using counselling method. One week after educational intervention post test survey was

conducted to know the sustainability of the knowledge imparted.

- **Statistical method to be used in the study:-** Data will be analyzes using Microsoft excel and SPSS.
- **Study technique:-** Data was collected and analyzed statistically by simple proportion and t- test

DATA ANALYSIS AND RESULT

After interviewing 250 respondents in urban slums of East Delhi, the socio-demographic profile, knowledge, personal practices for prevention and control of malaria was analyzed and the results were as follows:

Socio demographic characteristics

Total of 250 respondents were interviewed of which 180 (72%) were females and 70(28%) were males. The reason is that most men were out at work on any given day. The few men found were either running businesses around, jobless or unwell. Majority of the respondents were in 18–30 years age group.

Education differed significantly, most of the respondent had primary education or less as compare to higher education. The largest proportion of respondents was homemaker. About their family type 58% of respondent had joint family and 42% had nuclear family. Around 50% were living in Pucca house and 50% of respondent were living in mixed type of house.

Table No. 1: Socio-Demographic Profile

SOCIO DEMOGRAPHIC PROFILE	VARIABLE	FREQUENCY N=250	PERCENTAGE
Age	18-30	150	60.0%
	31-40	63	25.2%
	41-50	37	14.8%
Sex	Male	70	28
	Female	180	72
Education			
	professional degree	0	0%
	BA/B.Sc	3	1.2%
	high school diploma	0	0%
	high school	14	5.6%
	middle school	46	18.4%
	primary school	112	44.8%
	Illiterate	75	30%
Occupation			
	Professional	3	1.2%
	semi professional	0	0%
	Skilled	0	0%
	semi skilled	67	26.%8
	Unskilled	7	2.8%
	Unemployed	4	1.6%
	Homemaker	169	67.6%
Family type			
	Nuclear	120	48%
	Joint	130	52%
Type of house			
	Mixed	125	50%
	Pucca	125	50%

Table no. 2 shows the knowledge of the study participants regarding Malaria transmission, sign and symptoms, treatment, prevention and control. Respondents had heard about malaria and 92.8% respondents believed that it is one of the major health problem. Most of the respondent knew that mosquito bite is the cause of malaria . Before intervention about 231 (93.2%) respondents knew that fever is the major symptom of Malaria. Out of 250 respondents 62 (24.8%) said that malaria is transmitted by flies after intervention it decreases to 10%. About8.4% respondents before intervention mentioned that malaria could be transmitted from person to person contact. Approx 70% of the respondents believed that mosquito net protects from mosquito bite. Before intervention 26% of the respondents were of the opinion that malaria can be transmitted through blood transfusion but after educational intervention it decreased to 3%.

Table No. 2: Knowledge and Attitude regarding malaria

Questionnaire	Pre test		Post test		
	YES (%) N=250	**NO (%) N=250**	**YES (%) N=250**	**NO (%) N=250**	**NOT REPLIED (%) N=250**
Heard about malaria	226(92.8%)	24(7.2%)	241(96.4%)	0(0%)	9(3.6%)
Mosquito bite causes malaria	226(90.45%	24(9.6%)	241(96.4%)	0(0%)	9(3.6%)
Is fever symptoms of malaria	231(93.2%)	19(7.6%)	241(96.4%)	0(0%)	9(3.6%)
Is headache symptoms of malaria	202(80.8%)	48(19.2%)	241(96.4%)	0(0%)	9(3.6%)
Is malaria transmissible disease	151 (60.4%	136 (54.4%)	220(88%)	21(8.4%)	9(3.6%)
Know the name of malaria vector	2(0.8%)	248(99.2%)	2(0.8%)	239(94.8%)	9(3.6%)
Flies transmit malaria fever	62(24.8%)	188(75.2%)	10(4%)	231(92.4%)	9(3.6%)
Tick transmit malaria fever	151 (60.4%	99(39.6%)	13(5.2%)	227(90.8%)	9(3.6%)
All mosquito transmit malaria fever	235 (94%)	15(6%)	10(4%)	231(92.5%)	9(3.6%)
Person to person contact transmit malaria fever	21 (8.455	229(91.6%)	0(0%)	241((96.4%)	9(3.6%)
Through blood transfusion transmitted malaria fever	60 (24%)	190(76%)	3(1.2%)	238(95.2%)	9(3.6%)
Know common breading place of mosquito	215 (86%)	35(14%)	241(96.2%)	0(0%)	9(3.6%)

Is there treatment of malaria	211(84.4%)	39(15.6%)	241(96.4%)	(0%)	9(3.6%)
Know the commonest name of medicine used in malaria	0(0%)	250 (100%)	1(0.4%)	240(96%)	9(3.6%)
Is malaria a serious illness	226(90.4%)	24(9.6%)	240(96%)	1(0.4)	9(3.6%)
Are you getting risk of malaria	199 (79.6%)	51 (20.4%)	240(96%)	1(0.4%)	9(3.6%)

Fig 1: Pre intervention Knowledge and Attitude regarding malaria

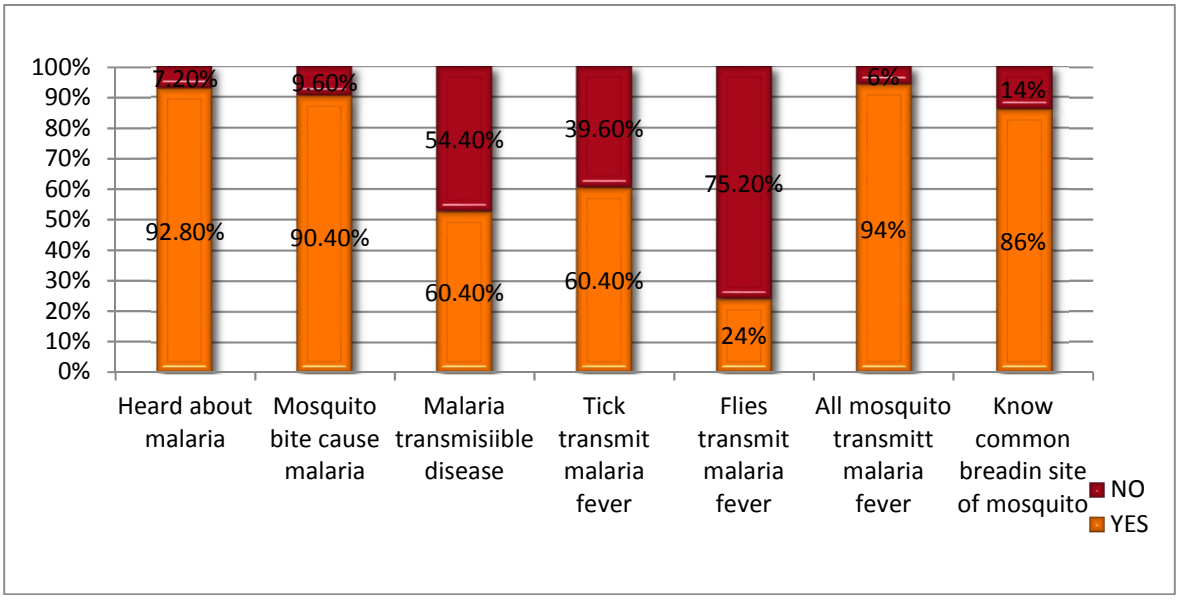

Fig 2: Post intervention Knowledge and Attitude responses regarding malaria

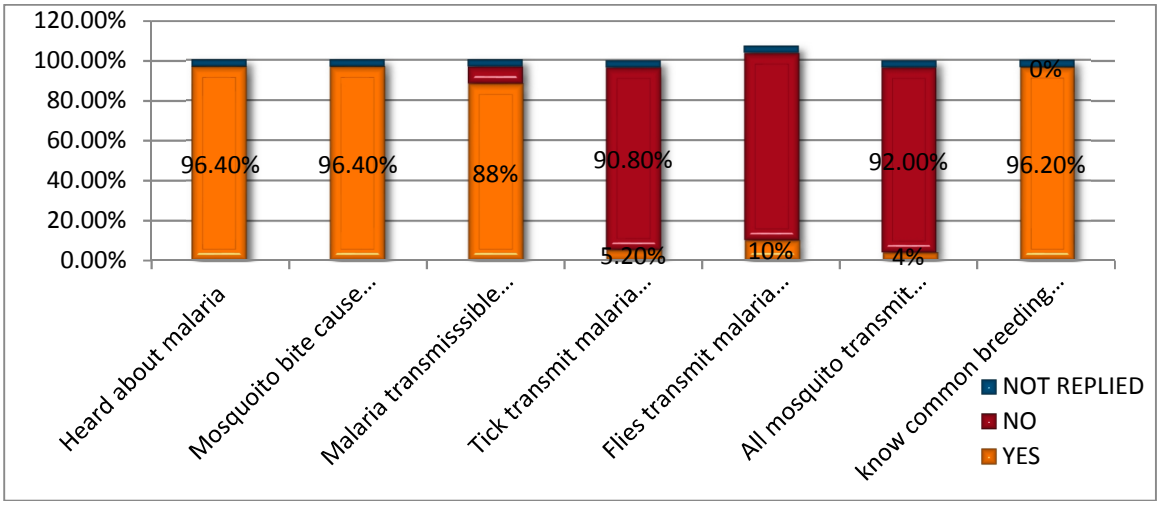

Table No. 3 shows the practices about malaria treatment, control and prevention of the study participants. Before intervention 64% of respondents cover water tank with lid after intervention it increased to 86%. From 250 respondents, 26 (10%) respondents were using mosquito nets before intervention, but after educational intervention it increased to 17.2 %. When asked about their personal practices about 51% of respondents before intervention used mosquito repellent in their house for control of mosquitoes but after intervention it increased to 86%. Most of the respondents before and after intervention were in favour of larvae elimination.

Table 2: Practices for prevention and control regarding malaria

Questionnaire	Pre test		Post test		
	YES (%) N=250	NO (%) N=250	YES (%) N=250	NO (%) N=250	NOT REPLIED (%),N=250
Cover water tank at home	160 (64%)	90 6%	215(86%)	26(10.4%)	9(3.6%)
Use mosquito repellent	129 (51.6%)	121 (48.4%)	215(86%)	26(10.4)	9(3.6%)
Use mosquito net	26 (10.4%)	224 (89.6%)	43(17.2%)	198(79.2%)	9(3.6%)
Participate community cleaning activities	211 (84.4%)	39 (14.6%)	232(92.8%)	9(3.6%)	9(3.6%)
Elimination larvae breeding is complete waste of time	7(2.8%)	243 (97.2%)	0(0%)	241(96.4%)	9(3.6%)

Fig 3: Practices for prevention and control regarding malaria (Pre intervention)

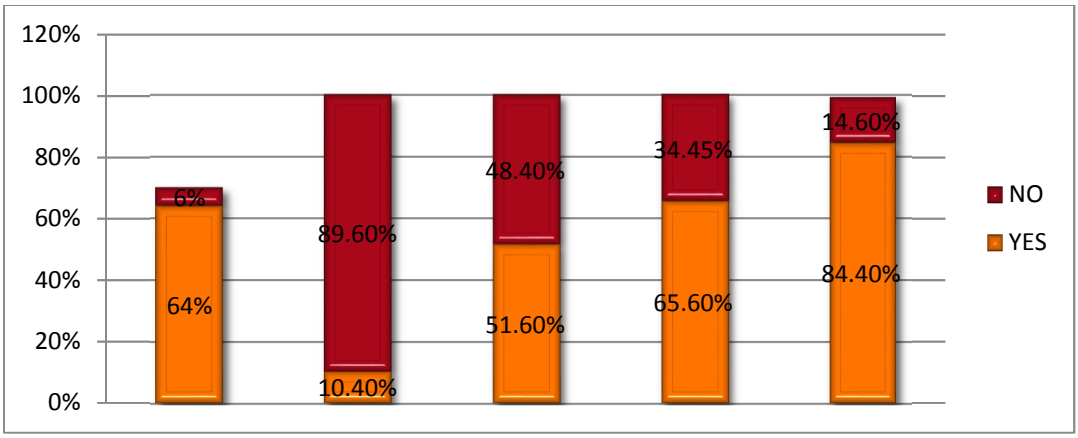

Fig 4 : Practices for prevention and control regarding malaria (Post intervention)

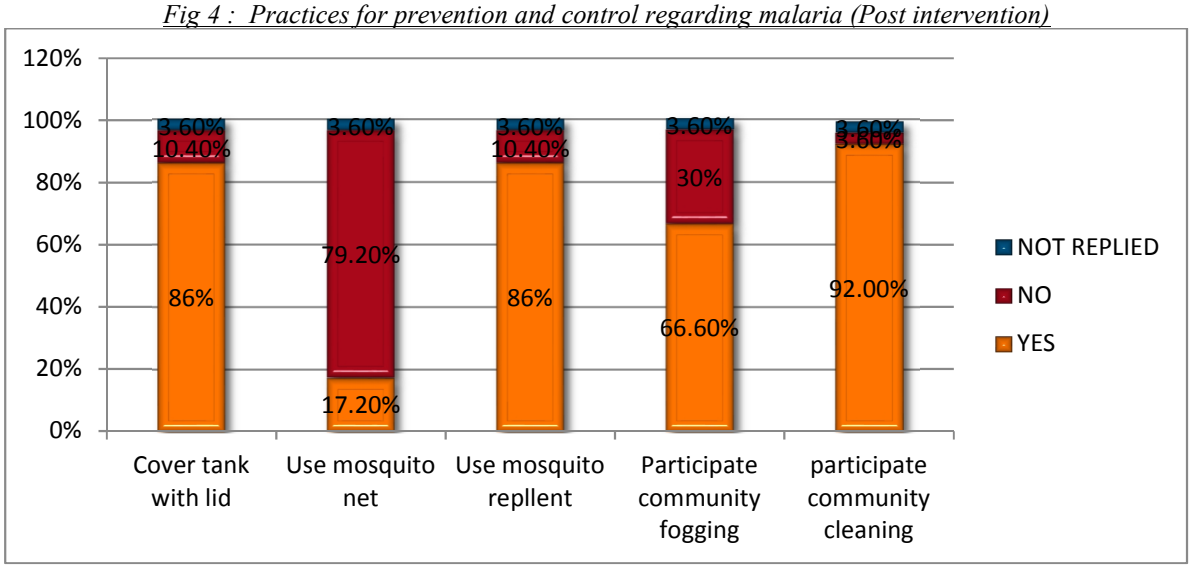

Table No. 4 shows the Knowledge and attitude responses about malaria treatment, control and prevention of the study participants. Before intervention 74%of the respondents answered mosquito bites during night, after intervention it increased to 75.2%. Before intervention 90% of the respondents reported next day for the treatment of fever, after intervention it decrease to 89.2% and only 6.4% of the respondents before intervention took treatment on same day and after intervention it increase to 7.2%.

Table No. 4: Knowledge and attitude responses regarding malaria (multiple responses)

QUESTION	VARIABLE	PRE TEST		POST TEST	
		Freq N=250	**%**	**Freq N=250**	**%**
*Mosquito bite during	Day	3	1.2%	3	1.2%
	Night	185	74%	188	75.2%
	Any time	52	10%	50	20%
	Don't know	10	4%	0	0%
Report for treatment of fever	Same day	16	6.4%	18	7.2%
	Next day	227	90.8%	223	89.2%
	After few days	7	2.8%	0	0%
*Mode of treatment for fever	Allopathic	234	93.6%	230	92%
	Ayurvedic	2	0.8%	2	0.8%%
	Homeopathic	64	25.6%	68	27.2%
	Faith healing	0	0%	0	0%
*Malaria control carried out by	Govt agencies only	87	34.8%	76	30.4%
	Private	3	1.2%	1	0.4%
	Public	10	4%	40	16%
	Govt+public	108	43.2%	175	70%
	No idea	158	63.2%	1	0.4%
*Source of information	TV+radio	230	92%	235	94%
	News paper	1	0.4%	5	2%
	Poster banner	0	0%	0	0%
	Health worker	44	17.6%	102	40.8%
	Internet	0	0%	0	0%

*Multiple responses were present

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pre test	18.05	250	15.664	.991
	post test	23.00	250	.000	.000

Paired sample t-test is a statistical technique that is used to compare two population means in the case of two samples (before and after study) that are correlated.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pre test & post test	250	-039.	.544.

Paired Samples Test

	Paired Differences					T	Df	Sig
	Mean	Std Dev	Std Error	95% Confidence Interval of the Difference				
				Upper	Lower			
Pair 1 pre test post test	-1.73200	12.98919	.82151	-3.34999	-11401	-2.108	249	.036

The independence t-test also called two sample t-test o student t-test, is an inferential statistical test that determines whether there is a statistically significant difference between the mean in two unrelated groups.

Inference-the significance level is less than 0.05 and hence the research hypothesis is accepted.

Proposed hypothesis is accepted. There is significant increase in knowledge and awareness in community. Similarly if we keep counsel each family in community then we can get considerable difference. From above study, we can understand the need of counselling in community.

DISCUSSION

This study was conducted in urban slum area of East Delhi. Majority of respondents were female. Most of the respondents were in the age group 18-30 years , a similar study done by Unnikrishnan B et al , (2008), in Coastal South India[14], most of the respondents were in the age group of 34 years .The study shows that high percentage of respondents had low education (30% illiterate, 44.8% primary education) which may explain why the awareness and knowledge was low about malaria particularly predisposing factor and prevention and control measure of disease.

In this study, the respondents had a behavioural change in their practices varying from before intervention to after intervention and it was statistically significant. The result shows the majority of respondent had heard about malaria, before intervention to after intervention it was 92.4% to 96.8% respectively. Most of the respondents approx 90% had knowledge about at least one of the symptoms of malaria These results are far better than other studies Patel AB et al 2011,in Rajkot city[17],. Before intervention, 90.2% respondents mentioned that mosquito bite was a possible cause of malaria, after intervention it increased to 96.8%.About 74% of respondents mentioned that mosquito's habits of biting was during night.

In the given study, (90.4%) respondents before intervention knew mosquito is responsible for transmission of diseases, after intervention it increase to 96.4 which was consistently higher (90.7%) as compare to study by Patel AB et al (2011) in Rajkot city[17].

This study also shows the lack of awareness in respondents, when asked whether tick and flies transmit malaria fever, 60% of respondent before intervention replied malaria fever is transmitted by tick and flies, after intervention it decreased to 5.2%.

In this study, before intervention 60.4% of the respondents replied malaria as a transmissible disease, after educational intervention it increases to 88%.

Before intervention 10% respondents were using mosquito nets and after intervention it increased to 17.2%. Similarly the use of mosquito repellents increase to 86% post intervention, which is much higher than found in study by Yadav SP et al (4%) 2007 ,in Rajasthan[18].

Regarding knowledge about mosquito breeding places, before intervention 86% of the respondents replied associated water collection with breeding place but after intervention it increased to 96.2%, which is much higher than the study done by Matta S et al (45%) [15]

Mosquito nets were used by 10% respondents before intervention, which is quite lower than found in other studies Matta S. et al (2006), Yadav SP et al(2007) in Rajasthan[15-18]. Which increased to 17% post intervention.

A large number of respondents knew that residual spray, repellent and insecticide treated net prevent malaria and hence use of these to prevent disease. More than half of respondent before intervention mentioned indoor residual spray (IRS) as a preventive measure. 50% respondent was using one or other personal protective measure against mosquito bites.

In the study, the frequency of storage tanks covered with lids was 64% before the educational intervention and after intervention it increased up to 86% . A similar study was conducted by Shuaib et al.[19] in 2010, where the covers of storage tanks with lid was quite lower (62.2%).

In the study, TV and Radio was the most important source of information (92%). A similar study was conducted by Acharya A. et al[16] (2005) in East Delhi. This showed the mass media is a very important source of information and which can be further used to disseminate more awareness regarding malaria.

Overall awareness regarding symptoms of malaria was satisfactory, but had lack of adequate

knowledge regarding disease transmission, predisposing factor, prevention and control measure of malaria.

Similar studies can be conducted on the larger scale in other parts of the country to assess the knowledge and awareness regarding malaria. This will help the health authorities to design strategies to impart relevant and appropriate health education and behaviour change communication techniques depending upon the needs of the area and thus help to curb the menace of vector borne disease in general and malaria in particular.

CONCLUSION

It can be concluded from the study, that although there is certain level of awareness among the community about malaria but there is need of IEC/BCC related intervention to enhance their level of knowledge and awareness among the community. Further it was observed that most of the people are illiterate in urban slums so the quality of IEC/BCC materials needs to be made community specific to be more effective.

Also it was observed that follow up of the community to change their behaviours is crucial and there is a need of more cycles of counselling related to change in behaviour towards prevention and control of malaria and other VBDs.

There were certain myths about Mosquito borne diseases, breeding places of mosquito, transmission of disease and various preventive methods. Massive and repeated health education sessions are required to clarify and abolish the same among the individuals and community at large.

IEC/BCC is a very important tool to make community a stakeholder in malaria control and elimination. Communities ownerships and awareness about their rights and services could be the most sustainable intervention to fight against Malaria. The limitations of my study were short period and the study was conducted only in urban slums. Hence for community participation IEC/BCC activities must be given thought and importance in the program.

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