Scholars Academic Journal of Biosciences (SAJB) **ISSN 2321-6883 (Online)**
Sch. Acad. J. Biosci., 2014; 2(10): 704-708 **ISSN 2347-9515 (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublisher.com

Research Article

Situation analysis of National Anti Malaria Programme in a district of Karnataka

Ramesh Holla[1], Kishore SG*[2], Praveen Kulkarni[3], Koradhanyamath DM[4]

[1]Assistant Professor, Department of Community Medicine, Kasturba Medical College (Manipal University), Mangalore - 575001, Karnataka, India

[2]Assistant Professor, Department of Community Medicine, Bangalore Medical College & Research Institute, Bangalore - 560002, Karnataka, India

[3]Assistant Professor, Department of Community Medicine, JSS Medical College, JSS University, Mysore - 570015, Karnataka, India

[4]Assistant Professor, Department of Community Medicine, Kempegowda Institute of Medical Sciences, Bangalore - 560070, Karnataka, India

***Corresponding author**
Dr. Kishore SG
Email: dr.kishoregowda@gmail.com

Abstract: Malaria continues to pose a major public health threat to the entire world. To mitigate the problem of vector borne diseases in the country Government of India launched a national programme called National Vector Borne Disease Control Programme (NVBDCP) in the year 2003-04. The present evaluation was carried out in one of the endemic districts of northern Karnataka with an objective of assessing the various programmatic aspects of anti malaria activities implemented at the district level. As per ROHFW guidelines 4 clusters (three from rural setting and one from urban setting) have to be selected for the purpose of NAMP evaluation, three talukas and one ward in the study district were selected randomly. Investigators visited the houses and interview was conducted with the adult responsible respondent aged between 18-60 years by using a structured survey proforma. Totally 207 houses were covered with minimum of 50 houses in each cluster. Except Cluster C, all the clusters had API of less than 2 per 1000 population per year whereas Cluster C had API of 2.14 per 1000 population per year. ABER of cluster A was found to be very low at 4.11% which is lower than the target set by the NVBDCP. Out of 25 members who had fever in the last fortnight, peripheral blood smear was collected from only 2 fever victims (8%) by the health care worker. More than three fourth of the total houses surveyed do not use bed nets while sleeping (n= 170, 82.1%). The anti malaria strategies of NVBDCP in the present district need to be focused in terms of implementation, monitoring, supervision and achieving the target at PHC/ ward level.

Keywords: Anti-Malaria Programme, Karnataka, Evaluation.

INTRODUCTION

Malaria continues to pose a major public health threat to the entire world more so in South-East Asia region of World Health Organization (WHO) even today. As per the latest estimates released in 2013 by WHO there were about 207 million cases of malaria in 2012 and an estimated 627 000 deaths. Malaria mortality rates have fallen by 42% globally since 2000 [1].

WHO SEARO reports that India accounts for 75% of all malaria cases in South-East Asia region. About 95% of the Indian population resides in malaria endemic areas; 80% of malaria reported in the country is confined to areas where 20% of population resides - in tribal, hilly, hard-to-reach or inaccessible areas. Malaria in India is particularly entrenched in low-income rural areas of eastern and north-eastern states, but important foci are also present in the central and more arid western parts of the country [2,3,4]. Since independence malaria is a constant public health problem in India, and case load was steady around 2 million cases annually in the late nineties which has shown a declining trend in the beginning of 20th Century. As per government of India report the annual incidence of malaria cases was found to be 881730 and falciparum malaria cases accounted for 52.6% (463846) of total malaria cases in 2013 [3,5]. In South India, Karnataka reports the highest incidence of malaria cases and it is the 5th state in the country contributing the highest malaria cases [6,7].

To mitigate the problem of vector borne diseases in the country Government of India has

launched a national programme called National Vector Borne Disease Control Programme (NVBDCP) in the year 2003-04 by merging National anti -malaria control programme , National Filaria Control Programme and Kala Azar Control programmes . Japanese B Encephalitis and Dengue/Dengue Hemorrhagic Fever have also been included in this programme [3,8]. This programme comes under the Ministry of Health and Family Welfare and is responsible for framing technical guidelines and policies, and monitoring implementation through regular reports on malaria control. The NVBDCP goals are to develop a well-informed and self-sustained health care system in India with equitable access to quality health care and to ensure that the program activities are in accord with the Millennium Development Goal of halting and reversing the incidence of malaria and other vector-borne diseases by the year 2015. The major strategies adopted under NVBDCP to achieve its objectives are (i) early diagnosis and prompt treatment (ii) integrated vector management (IVM) to reduce the risk of vector-borne transmission; and (iii) supportive interventions which include communicating behavior change, capacity building and monitoring and evaluation of programs. Recently under the National Rural Health Mission (NRHM) initiative has been taken to introduce and train the village-based Accredited Social and Health Activist (ASHAs), in malaria diagnosis by rapid diagnostic tests (RDTs), and antimalarial drug administration so as to deliver the programme strategies close to the community [3]. As most of the districts in Karnataka are endemic to malaria, the present evaluation was carried out in one of the northern districts of Karnataka with an objective of assessing the various programmatic aspects of anti malaria activities implemented at the district level.

MATERIALS AND METHODS

The present study on evaluation of National Anti-malaria Programme of the district was undertaken as per the instructions laid by Regional office for Health and Family Welfare (ROHFW), Govt. of India. After obtaining the profile of a district from the district authority; all talukas and wards were line listed. As per ROHFW guidelines 4 clusters (three from rural setting and one from urban setting) have to be selected for the purpose of NAMP evaluation, three talukas and one ward in the study district were selected randomly. One primary health centre (PHC) was selected by lottery method from each of the selected talukas. Subsequently from the selected PHC subcentres and villages coming under the jurisdiction were listed, and a subcentre and a village were selected randomly by lottery method for household survey. Center of the village/ ward was identified by taking the help of a resident of the village; from there the four directions were identified and numbered. One direction was chosen randomly and a walkthrough survey was done to note the average number of houses in the street. Investigators visited the houses and interview was conducted with the adult responsible respondent aged between 18-60 years after explaining the purpose of the survey. By using a structured survey proforma the information regarding sociodemographic characteristics, usage of bed nets and the details regarding fever cases in the family, and visits paid by the health workers was captured. Totally 207 houses were covered with minimum of 50 houses in each cluster.

The information regarding malariometric indices of the selected village/ward was obtained from the medical officer of the concerned PHC. The collected data was entered and analysed by using Statistical Package for Social Sciences version 11.5 (SPSS). Descriptive statistics was used to express the results.

RESULTS

Malariometric indices of the selected four clusters for the evaluation was depicted in Table 1. Except Cluster C, all the clusters had API of less than 2 per 1000 population per year whereas Cluster C had API of 2.14 per 1000 population per year. Clusters B and C had reasonably high ABER i.e. 20.62% and 23.48% respectively. ABER of cluster A was found to be very low at 4.11% which is lower than the target set by the NVBDCP. It is evident from our observation that both slide positivity rate (SPR) and slide vivax rates (SVR) were higher for cluster A (1.72% and 1.25% respectively) when compared to other clusters. Cluster D had very low SPR and SVR (0.04% and 0.02% respectively). Slide falciparum rate was highest for cluster A (0.47%) and lowest for cluster C (0.01). It is obvious from the above table that in cluster D falciparum malaria was accounted for 50% of total malaria cases and it was only 2.4% in Cluster C. In clusters A and B it was found to be almost equal (27.50% and 28.60% respectively).

Table 1: Distribution of clusters as per malariometric indices

Malariometric Index	A (Urban)	B (Rural)	C (Rural)	D (Rural)
API (per 1000 population per year)	0.15	0.16	2.14	0.12
ABER (%)	04.11	20.62	23.48	14.67
Slide Positivity Rate (%)	01.72	0.30	0.60	0.04
Slide Vivax Rate (%)	01.25	0.22	0.59	0.02
Slide Falciparum Rate (%)	0.47	0.08	0.01	0.02
Falciparum Percentage	27.50	28.60	02.4	50.00

Out of 207 houses surveyed majority of the members of the household are aged 18 and above (n=651, 68.5%). Male and female distribution of the surveyed population was found to be almost equal (Males- 53% and Females- 47%). It is evident from the table that more than three fourth of the surveyed houses are Hindus (n= 171, 82.6%) and 16.9 % are Muslim by religion (n= 35). While analyzing the education status of the surveyed population, it was noticed that most of them were illiterates (n= 277, 29.1%) followed by those who are studied up to high school (n=212, 22.3%). The proportion of population who were graduate and having professional degree was found to be very minimal (4.3% and 1.6% respectively). Nearly half of the surveyed population are engaged in unskilled work (n=444, 46.7%). Socio economic status of the household was analyzed by using BG Prasad classification [9]. It is seen that most of the households were belong to upper lower socio economic status (n= 93, 45.0%) followed by 28.0% of the households were of lower socio economic status (n=58). Socio demographic characteristics of survey population was shown in Table 2.

Table 2 : Socio Demographic Characteristics of survey population (n=951)

Socio Demographic Characteristics	Number	Percentage
Age in Years		
<18	300	31.5
≥ 18	651	68.5
Sex		
Male	504	53.0
Female	447	47.0
Religion of the household		
Hindu	171	82.6
Muslim	035	16.9
Christian	001	00.5
Education		
Illiterate	277	29.1
Primary	098	10.3
Middle	125	13.1
High school	212	22.3
Intermediate/Diploma	137	14.4
Graduate	041	04.3
Professional degree	014	01.6
Not applicable	047	04.9
Occupation		
Unemployed	021	02.2
Unskilled	444	46.7
Semiskilled	014	01.5
Skilled worker	064	06.7
Clerical/shop/farm	066	06.9
Semi-profession	002	00.2
Profession	012	01.3
Not applicable	328	34.5
Socioeconomic status of the household		
Upper	03	01.5
Upper middle	15	07.2
Lower Middle	38	18.3
Upper lower	93	45.0
Lower	58	28.0

During the household survey it was noticed that a total of 25 members had fever in the last 15 days, out of which majority of them are aged 18 and above (n=18, 72%). It is seen that proportion of fever cases was more among males (n=13, 52%) as compared to females (n=12, 48%). Though 25 members had fever in the last fortnight peripheral blood smear was collected from only 2 fever victims (8%) by the health care worker. Age and sex distribution of fever cases in the surveyed population is shown in Table 3.

Bed net usage pattern of the household is shown in Table 4. It is evident that more than three fourth of the total houses surveyed do not use bed nets while sleeping (n= 170, 82.1%) and hardly one fifth of the households are using bed nets (n=37, 17.9 %).

Table 3: Age and sex distribution of fever cases in the surveyed population (n=25)

Age in years	Frequency of fever cases		Total n (%)
	Male n (%)	Female n (%)	
<18	03 (23.0)	04 (33.3)	07 (28.0)
≥ 18	10(77.0)	08 (66.7)	18(72.0)
Total	**13 (52.0)**	**12 (48.0)**	**25 (100)**

Table 4: Usage of bed nets at the households (n=207)

Bed net usage	Frequency	Percentage
Yes	037	17.9
No	170	82.1
Total	**207**	**100**

DISCUSSION

Malaria continues to be a major endemic disease in most of the districts of Karnataka. The present evaluation was carried out in one of the endemic district of northern Karnataka. It was observed that the urban cluster had the lowest ABER at 4.11% which is not in line with the NVBDCP guidelines [3] where it is mentioned Annual Blood Examination Rate (ABER) target should be at ≥10% for screening the Indian population which is based on the presumption that 10% of the population in a year will have fever at one point of time or another. Similar finding was observed in a study done at West Bengal where ABER was ranged from 3% to 4% [10]. A coverage evaluation survey done at Raichur district [6]; which is also one of the endemic districts of northern Karnataka has shown findings similar to the present evaluation where the urban cluster had an ABER of 3.40%. As nearly 10% of the total Malaria cases are reported from urban areas [3], all these figures reflects that surveillance activities are not conducted in an intended way in the urban areas [11].

Out of four clusters chosen for the present evaluation only one rural cluster had an API of more than 2 per 1000 population per year which indicate a declining trend of malaria incidence. During household evaluation when we assessed the number of fever cases in the last fortnight it was noticed that 25 had fever and male & female distribution of the fever cases was found to be almost equal. Majority of the fever victims are in the economically productive age range i.e. more than 18 years which might be responsible for significant financial burden to the family. Though 25 members had fever in the last fortnight peripheral blood smear was collected from only 2 fever victims (8%) by the health care workers which reflects a poor active surveillance in the district. This poor active surveillance can seriously jeopardize the anti malaria activities imparted through NVBDCP.

The present study has shown less than one fifth of the households are using bed nets while sleeping. As the present district is one of the endemic district this much low percentage utilization of bed nets usage is not acceptable. The present evaluation is not without any limitation. In this context a well planned and systematic evaluation should be carried out by incorporating all the major strategies of programme which will help to deliver the programme strategies in a more effective manner.

The anti malaria strategies of NVBDCP in the present district need to be focused in terms of implementation, monitoring, supervision and achieving the target at PHC/ ward level.

Acknowledgements: We thank Senior Regional Director, ROHFW, Government of India, Kendriya Sadhana, Bangalore for providing opportunity in conducting this evaluation. We also acknowledge the help and support given by the district health officer and district malaria officer.

REFERENCES

1. World Health Organization. Available from: URL: http://www.who.int/mediacentre/factsheets/fs094/en/

2. World Health Organization India. Available from: URL: http://www.searo.who.int/india/topics/malaria/en/
3. National Vector Borne Disease Control Programme. Directorate General of Health Services. Ministry of Health and Family Welfare. Government of India. Available from: URL: http://nvbdcp.gov.in/malaria3.html
4. Aparup D, Anupkumar R, Lauren JC, Ramesh CD, Alex E, Neelima M et al.; Malaria in India: The center for the study of complex malaria in India. Acta Trop, 2012;121(3): 267–273.
5. Park K; Park's textbook of preventive and social medicine. 22nd ed. Jabalpur: Banarsidas Bhanot; 2013. p. 232-4.
6. Sanjay TV, Giriyanna G, Kishore SG; An evaluation of national anti malaria programme in a district of Karnataka, India. Asian Pac J Trop Dis, 2015;5:31-35.
7. Sharma VP. Hidden burden of malaria in Indian women. Malaria J, 2009;8:281.
8. National Health Portal. National Vector Borne Disease Control Programme. Available from: URL: http://www.nhp.gov.in/health-programmes/national-health-programmes/national-vector-borne-disease-control-programme
9. Shankar RD, Arlappa N; An updated Prasad's socio economic status classification for 2013. Int J Res Dev Health 2013;1(2):26-8.
10. Sharma PK, Ramanchandran R, Hutin YJ, Sharma R, Gupte MD; Malaria outbreak in Naxalbari, Darjeeling district, West Bengal, India, 2005: Weakness in disease control, important risk factors. Malaria J, 2009;8:288.
11. Dash AP, Valecha N, Anvikar AR, Kumar A; Malaria in India : Challenges and opportunities. J Bioscience 2008;33(4):583-92.